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ABSTRACT

This publication contains a selection of undergraduate and graduate student research papers offered to the Eta Sigma Gamma Society in the health science disciplines. Articles include: (1) "The Development of Public/Private Partnerships and Their Impact on the Future of Public Health" (James Broadbear); (2) "Cancer Knowledge, Self-Efficacy and Cancer Screening Behaviors among Mexican-American Women" (Vanessa Carpenter); (3) "Health Education and the Media: Friends or Foes?" (Laura N. Deitsch); (4) "The Seropositive Child: Evolution of School Policy in the Age of AIDS" (Elisha A. Eisenberg); (5) "Expanded Use of Champion's Health Belief Scale: Breast Self-Examination and Sexual Orientation" (Lyndall Ellingson); (6) "Women's Dependence on Fad Dieting: A Result of Cultural Influence" (Jennifer A. Lovinfosse); (7) "Adolescent Sexuality Education: The Public Health Role" (Michele Moore); (8) "The Role of Health Educators in the Occupational Health and Safety Field: Present and Future Opportunities" (Chris R. Nelson); (9) "Issues Related to the use of Racially Segregated Health Data" (Dawn D. Shears); and (10) "Cultural and Environmental Influences on Dietary Behavior and Cardiovascular Health among Chinese-American Adolescents" (Wei Yue Sun). Information on article reviewers and contributors is appended. Each article contains references. (NAV)

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The Eta Sigma Gamma

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THE
STUDENT MONOGRAPH
ORIGINAL ARTICLES
BY
STUDENT GAMMANS
1995 EDITION

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VOLUME 13 NUMBER 1
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The Eta Sigma Gamma

Monograph Series

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Foreword

Editing the **1995 Eta Sigma Gamma Student Monograph** has been an enjoyable task. I had the opportunity to correspond with over twenty students from around the nation who submitted manuscripts. I also got to work with an outstanding group of professionals that I admire greatly.

All of the students who submitted manuscripts are to be commended. The ones we accepted were a minority of the outstanding papers that were submitted, and I am sorry that we could not accept more. I am pleased with the quality of work that was demonstrated — the future of our profession is in capable hands. We made a special effort to encourage undergraduates to submit their work this year and it paid off. Several undergraduate papers were submitted, and we were pleased to accept three excellent ones. The faculty sponsors of all of the students who submitted papers are to be commended as well. Their support and encouragement of students is a driving force in maintaining the excellence reflected in **Eta Sigma Gamma**.

I would also like to encourage those who did not have their manuscripts accepted to try again. It takes courage to submit your writing to other people for judgment, and many of us know the feelings of discouragement and disappointment that accompany the rejection of our submissions. Please do not let these feelings stop you from submitting other manuscripts to professional journals.

Editing this issue is not a task that one accomplishes alone. I want to thank the reviewers whose names are listed in this issue. Please take a moment to glance at this list and acknowledge the efforts of these people that gave of their time and shared their expertise with the authors and me — their contributions were invaluable. Nancy McQuiston of Professional Communications did outstanding work in helping me to edit the accepted manuscripts into proper format. The suggestions and encouragement of Dr. Judy Luebke and Dr. Mohammad Torabi have been especially helpful, and I appreciate their support and confidence in me.

Best wishes and good health!

Brian Colwell, PhD, CHES
Guest Editor, **1995 Student Monograph**

Preface

On behalf of your National Executive Committee of **Eta Sigma Gamma**, I would like to offer my sincere congratulations to all of the students who submitted research papers for publication consideration in this **Monograph Series**. This is a strong indication of our students' commitment to research. I would like to extend my genuine appreciation to Dr. Brian Colwell for the excellent job he has done as our Guest Editor for this issue. Further, I wish to thank all faculty advisors who encouraged and worked with the students in the manuscript preparation, Terri King for her assistance in preparing the final publication, and Joyce Arthur for her technical assistance. A special thanks is also extended to Kathy Kennedy and Billie Kennedy, National Staff secretaries, for their general assistance.

I would like to invite all faculty to encourage students to submit research papers for the next **Student Monograph Series**. The deadline for submission is January 20, 1996. Our next guest editor for the **Student Monograph** is Dr. Martin L. Wood at Ball State University. His telephone number is (317)285-8349.

Finally, I would like to thank you for sharing your comments with me regarding the past **Monograph Series**. As always, I am eager to hear your criticism, comments, and suggestions relative to this publication. It is a privilege for me to serve **ESG** members and our profession.

I look forward to hearing from you.

Mohammad R. Torabi, PhD, MPH, CHES
Editor, **Monograph Series**

10/3/95

Table of Contents

The Development of Public Private Partnerships and Their Impact on the Future of Public Health
James Broadbear 1

Cancer Knowledge, Self-efficacy and Cancer Screening Behaviors Among Mexican-American Women
Vanessa Carpenter 12

Health Education and the Media: Friends or Foes?
Laura N. Deitsch 22

The Seropositive Child: Evolution of School Policy in the Age of AIDS
Elisha A. Eisenberg 33

Expanded Use of Champion's Health Belief Scale: Breast Self-Examination and Sexual Orientation
Lyndall Ellingson 42

Women's Dependence on Fad Dieting: A Result of Cultural Influence
Jennifer A. Lovinfosse 57

Adolescent Sexuality Education: The Public Health Role
Michele Moore 64

The Role of Health Educators in the Occupational Health and Safety Field: Present and Future Opportunities
Chris R. Nelson 75

Issues Related to the Use of Racially Segregated Health Data
Dawn D. Shears 88

Cultural and Environmental Influences on Dietary Behavior and Cardiovascular Health Among Chinese-American Adolescents
Wei Yue Sun 98

Appendices
Reviewers 108
Contributors 110

The Development of Public/Private Partnerships and Their Impact on the Future of Public Health

James Broadbear
Indiana University

Introduction

Public/private partnerships have become one of the most exciting and controversial developments in the field of public administration. Many government agencies are moving toward associations with private, for-profit and not-for-profit organizations in an effort to take advantage of the real and perceived benefits privatization brings and to adapt to the changing political environment, which is calling for increased efficiency. Public health agencies must also determine the viability of partnerships with private firms for their particular service domain. The purpose of this paper is to review the concept of public/private partnerships and offer a glimpse into the possible impact of partnerships on the future of health education and public health programs.

Historical and Philosophical Developments of Public/Private Partnerships

During the second half of this century, shifts in philosophical views regarding the essential role of government and economic conditions have created a positive atmosphere for public/private partnerships. Strained state budgets, weak and fluctuating economies, and encouragement from the federal government have been key to this change (Feldman, 1993). Philosophically, a question exists regarding who should provide the services commonly associated with government. Conservative ideology is associated with smaller government and the push to privatize, while liberalism advocates expansion of

governmental services. On the federal level, transportation, communications, and defense services already have been privatized, partially or wholly. States and local government have moved away from direct provisions of wastewater treatment, garbage disposal, and other services with increasing frequency.

Public/private partnerships are not easily defined. Consisting of more than simply selling off assets or contracting with private firms, privatization has been broadly defined as "government's use of the private sector (both for-profit and not-for-profit) to deliver public policies and improve the content and implementation of public programs" (Henry, 1995, p. 318). The aspiration to privatize is uniquely strong in the United States; its roots in this country lie in the genesis of the field of public administration. Woodrow Wilson, commonly viewed as the father of the discipline, defined public administration as "a field of business" (Starling, 1993, p. 37). After Wilson's seminal writings, the government began a steady growth through involvement in direct provision of services. By the early 1950s, the federal government was

> the largest electric power producer in the country, the largest insurer, the largest lender and the largest borrower, the largest landlord and the largest tenant, the largest holder of grazing land and timberland, the largest owner of grain, the largest warehouse operator, the largest shipowner, and the largest truck fleet operator (Henry, 1995, p. 319).

The result was predictable. Business and industry became frustrated with the vestiges of a system put in place early in the century and considerably expanded during World War II. Business leaders began to demand that government release its grip on this enormous share of the economy, a refrain often heard today from conservative politicians who seek to break the dependance many American institutions have on the federal government. During the Eisenhower administration, government began to contract out services over which it had monopolistic control. Today, government money spent on federal contracts exceeds the federal payroll (Henry, 1995, p. 320).

State and local governments have followed suit. More obstacles exist between local public administrators and privatization but the trend is still present. Most governments in this country, with the exception of the federal government, are forced to balance their budget every year. While this leads to greater efforts to reduce costs, it hampers flexibility in contracting out many services. Unions are stronger at state and local levels, so reductions in staffing and changes in employment requirements are more likely to be resisted (Henry, 1995). Privatization efforts in local governments are also complicated by the intimacy of politics at the city and county level. Public administrators have limited flexibility in establishing and maintaining public/private partnerships because of the close relationships established in local government (Henry, 1995). Familiarity also makes oversight and renewal of contracts problematic.

Privatization has emerged as an alternative to economic pressures on government because of the largely unexamined assumption that private sector means lower cost, increased efficiency, and greater innovation (Richter, 1993). But the different roles of the public and private sector need to be considered. Private business is fundamentally concerned with profit. In our liberally capitalistic economy, this motive has been the driving force behind the massive economic prosperity experienced in this country. However, profit motives are not always in keeping with the public good, which we must assume is still the main concern of government.

What are the advantages of privatization? The public sector benefits because citizens are increasingly opposed to higher taxes and regulatory requirements. The cost of government-sponsored services has exceeded the public's desire to pay and public administrators have been forced to design new management strategies to cope (Feldman, 1993). Privatization limits the public administrators' accountability for service delivery, which can potentially increase effectiveness of the service. Government also benefits from privatization by incorporating the marketing skills and aggressive view of margin common to business.

The private sector benefits through increased market and the economies of scale gained through operation of multiple facilities and services. By accepting the risk for performance and alleviating the burden from government, companies can foster more positive and lasting relationships with governmental agencies (Henry, 1995). The competition associated with procurement of privatized services increases the efficiency of business and sharpens abilities that can make the provider more competitive in other market conditions. The financial strength of private providers generally assures greater stability of services and can result in beneficial public policy adoption due to business' ability and desire to lobby for appropriate resources and operating conditions. The crucial drawback for the public sector is the unknown economic stability of government contracts and payments.

Building a strong public/private partnership can benefit both sectors as long as attention is given to specific concerns. While the public sector can benefit from not being tied to direct delivery of services, they cannot completely lose control of service delivery. Public administrators must be concerned with the good of existing employees as well as the length and conditions of the contract agreement. If these factors are compromised, quality of service could diminish instead of improve (Feldman, 1993).

Organizational Structure of Public/Private Partnerships

Public/private partnerships take many different forms. While consensus on the typical organization would be difficult to describe, the process required to form a partnership is somewhat standard. Partnerships can be accomplished by bringing adversaries together in an attempt to forge new and innovative alliances. Companies can improve brand loyalty for their products by combining promotion of their products with educational campaigns. Partnerships may also boost sales of specific products or assist in damage control (Rabin, 1992). No matter what motivates the private company, partnerships

can be formed through good communication, fairness, and an effort to attain mutual benefit.

Starling describes a continuum of privatization efforts. As a service moves from left to right on the continuum, it becomes more privatized (Starling, 1993, p. 118).

Governmental<----Intergovernmental---Contract---Grants---Franchise---Partnership---Voucher---Voluntary Service----->Market

Within the continuum, intergovernmental relations constitute the simplest form of privatization because it involves the greatest amount of government involvement. On the other end, voluntary services would require the least governmental involvement and be closest to a free-market approach to service delivery, maximizing privatization. Examples of each of the organizational structures of public/private partnerships can be seen throughout all levels of government.

Examples of Public/Private Partnerships

One of the most prominent examples of privatization is the change in mental health services in Massachusetts, where Governor William Weld has led a massive attempt to privatize health-related services. His efforts began with state-operated mental health facilities and long-term nursing care. Since 1988, the state Department of Mental Health has transferred hundreds of beds designated for inpatient psychiatric care to private facilities and closed 11 of 34 state-run facilities. The result has been savings of hundreds of millions of dollars, improvements in the quality of care, and the development of more than 2,000 community placement centers for mental health and long-term care patients (Burke, 1992). State-run facilities are no longer required to take all patients of need. Instead, people receive care in their own communities. Some mental health practitioners feel the stigma of treatment at a mental health facility has been alleviated by incorporating these services into existing community health centers (Brotman, 1992).

In other states, health education programs have also been privatized. In Indianapolis, the Ruth Lilly Center for Health Education opened in the fall of 1989 as a result of a donation by Ruth Lilly, who saw the need for a state-of-the-art health education facility that would target Indianapolis youth. Corporate sponsorship by the Eli Lilly Corporation, the regional power company, and a local hospital provided additional resources for the facility. The center was designed to focus on general health issues and supplement the required health education curricula of Indiana public school students (G. Weisner, Executive Director, personal communication, November 4, 1994). This private, not-for-profit facility is sustained by student visitation fees and ongoing corporate support while serving a clientele consisting of 90% public school students. The facility offers health education learning pods that combine computer programs, images, and audiovisuals in an integrated approach. Students learn about different health issues such as human anatomy and physiology, nutrition, drug education, and sexuality. The center's goal is to complement and enhance the curriculum designated in the Indiana Department of Education health proficiency guide.

Many states have privatized portions of their health insurance programs. While the federal government moves painfully slowly toward national health reform, states are actively making changes that are producing remarkable results. Efforts have primarily taken the form of subsidizing private coverage for the uninsured, creating tax incentives for small business employers unable to provide coverage for their employees, insurance reform aimed at small group markets, and comprehensive strategies that combine some or all of the above to achieve greater health coverage and control costs (Riley, 1991). All are examples of privatization efforts currently enacted. These systems increase health insurance coverage while increasing opportunities for private sector providers.

Other public-health-related services have been contracted from local governments to the private sector as well. The list below indicates the percentage of services contracted to the private sector between 1982 and 1987 by cities and counties in the United States.

Service	Percent Contracted
Solid waste collection or disposal	60
Hospitals, health care or emergency services	16
Elderly or handicapped	12
Housing or shelters	4
Child care or day care	4

*adapted from Henry, 1995, Table 11-1, p. 336

Privatization is still in its infancy. Far more services are likely to undergo similar processes.

Goals of Public/Private Partnerships

As discussed previously, the public and private sectors have different needs and interests for creating partnerships. If they are to be successful, shared goals must be established and workable objectives that are realistic for the provider, yet allow sufficient control by the public agency, must be achieved. According to Mike White, a former official with the National Institutes of Health and the Centers for Disease Control, "When carefully crafted, these alliances provide a win-win situation for both partners and for the public" (Rabin, 1992, p. 32). With the exception of voluntary services, these partnerships are not considered charitable work by private companies. Instead, the partnership must be a win-win relationship, with mutual rewards.

Evaluation of Public/Private Partnerships

The question of privatizing governmental services is complex primarily because evaluation of privatization is difficult. To frame the issue, one must consider efficiency. Will privatization actually reduce costs or just shift the payment from the operations budget to payments to a third-party provider? Government officials must also consider policy issues. To what degree will private agencies be able to dictate policy because of their position as provider? Finally, the most troubling

aspect of evaluation is corruption. Fraud and corruption are rampant in many contracts, and public administrators must have systems in place to deal effectively with this real threat to service and financial health (Henry, 1995).

One way for all parties to evaluate the effectiveness of a public/private partnership is Project Management Oversight (PMO) programs. In many cases, the governmental agency does not possess the technical skills to evaluate the provider. PMOs make up for this deficiency by using a panel of experts who are peers of the providers to provide oversight and evaluation (Richter, 1993). The PMO reduces the number of public officials required to oversee contracts, and, by adding a layer of independent evaluators between the public and private sectors, reduces the chance for corruption or hiring away of talented people from the public agency. PMOs also ensure better documentation of services, and by doing so increase the likelihood that the public is getting its money's worth.

The Massachusetts case mentioned previously has created opportunities for private companies and markedly increased competition. Mental health services available to communities have increased as facilities have become decentralized (Burke, 1992). Overall, the effect has been positive for the citizens of the state, because of the significant amount of competition and large number of providers who could deliver mental health services. However, it would be difficult to say if the same would be true for other public health services.

Budget Effects of Public/Private Partnerships

An example of significant financial success in privatization can be found in Indianapolis, where Mayor Stephen Goldsmith received an award from the National Council for Public-Private Partnerships in 1993. During his first year in office, Goldsmith used private-sector volunteers to analyze the cost effectiveness of every city-run service ("National council on public-private partnerships announces awards," 1994). As result of this effort, monopolies were broken, continuous

competition and bidding between private and public employees began, financial rewards for employees with creative cost-saving ideas were implemented, and the budgeting process focused on outcomes. Savings from these efforts have created a $530 million infrastructure program for the city and the addition of 100 police officers, without any tax increases, and at a savings of more than $100 million in government expenses.

The Indianapolis case illustrates the benefit of systemic privatization. The impact on individual agencies is more difficult to discern. Over time, more information will be available to shed light on the potential financial impact for public health agencies.

Conclusions

The ultimate goal of privatization is increased efficiencies in government services that can save money, reduce the size of government, and maintain or increase quality of services. Public/private partnerships take a variety of forms, with varying degrees of success attained based on the appropriateness and quality of the relationship. Public health services can engage in "entrepreneurial government," thus "unfettering public administrators from some outdated restrictions so that they can act more like business entrepreneurs in making government more beneficial to the everyday lives of people" (Henry, 1995, p. 356). This view is neither liberal nor conservative, but simply logical. While the political nature of public health management will always require consensus building and incorporating multiple points of view into decision making, the goal should be government that works for the best interest of the people and ultimately funds results, not programs.

Administrators in public health agencies face many of the same problems seen in other areas of government. Tightening financial conditions, increasing scrutiny by the public and media, and a receptive political environment all indicate that the trend toward privatization will require changes in priorities and procedures in the

near future. The private sector does not always wait for government to make the first move. Private for-profit and not-for-profit organizations are seeing opportunities and seeking to fill voids not controlled by public health agencies.

Partnerships between the public and private sector could become a major trend in the field of public health. The possibilities are profound. Services of all types could benefit to some degree. Smith and Lipsky (1992) note that care and attention must be given to privatization and point out that while some public health services benefit tremendously from partnerships with the private sector, others are not well-suited to such partnerships.

The need for public health services will continue to expand into the next century. Incorporating public/private partnerships into public health will require adaptability and foresight by present and future administrators. The prospect offers a new and exciting challenge for administrators and one that could unlock remarkable innovations and rewards.

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Cancer Knowledge, Self-efficacy and Cancer Screening Behaviors Among Mexican-American Women

Vanessa Carpenter
Texas A&M University

Mexican-Americans make up the largest subgroup of the Hispanic population and represent one of the fastest growing ethnic groups in the United States (Amaro, Whitaker, Coffman & Heeren, 1990). However, studies that specifically pertain to Mexican-Americans are few. References are often made to Hispanics, Chicanos, or Latinos interchangeably rather than Mexican-Americans as a distinct subpopulation. The published studies of the Hispanic population that do exist have found that Hispanics are less informed than the general public about cancer. They are less familiar with the warning signs of cancer, less aware of available cancer screening tests, and much less convinced of the effectiveness of cancer treatments (Villejo, 1991). Researchers have also found that misconceptions about cancer are more prevalent among Latinos than Anglos (Perez-Stable, Sabogal, Otero-Sabogal, Hiatt & McPhee, 1992) and that Hispanics are more likely to be diagnosed at advanced stages of cancer than non-Hispanic whites (Vernon, Vogal, Halabi, Jackson, Lundy & Peters, 1991).

Mexican-Americans' lack of knowledge and misconceptions about cancer lead to underutilization of early-detection programs and can partially explain the lower survival rates for some cancers in that group. The difference in knowledge between Mexican-Americans and the general public is a result of many factors, including low socioeconomic status, which is a barrier to information, language barriers, and a fatalistic perception that individuals have no control over their chances of getting cancer (Yancey & Walden, 1994; Perez-Stable, et al., 1992).

Previous research has shown that poor health, inappropriate health behavior, low levels of health knowledge, and little use of

preventive health services cluster in the lowest socioeconomic groups (Freimuth & Mettger, 1990). Poverty and low educational level, the major components of socioeconomic status, go hand in hand with high cancer mortality (Gonzalez, 1989). Many Mexican-Americans are undereducated: the median number of school years completed by Mexican-Americans is 10.2 years, compared with 12.7 for non-Hispanics. In addition, 17.1% of Mexican-Americans have completed fewer than five years of school, while only two percent of non-Hispanics have completed less than five years.

This lack of education is a tremendous problem, especially in relation to economic factors. A large portion of the Hispanic population lives below the poverty line; in 1985, 25.2% of Hispanics lived in poverty compared with 11.6% of the total population (Montes, 1989). The link between poverty, educational level, and health status is especially important to consider for Mexican-American women, many of whom struggle to meet basic needs.

Risk factors for cancer among Mexican-American women

The four major risk factors for cancer are socioeconomic status, smoking, alcohol, and diet/nutrition (Montes, 1989). These risk factors proliferate among the Mexican-American population. As Mexican-American women acculturate into the mainstream culture of the United States, they often adopt the norms and patterns of their American counterparts (Black & Markides, 1993). As a result, many of these women smoke cigarettes, drink alcohol, and have poor nutrition habits. The smoking rate for Mexican-American women is 24%, up from 18.3% in the National Health Interview Survey (NHIS) data for 1979-1980 (Montes, 1989). Alcohol consumption rates are also increasing. As Mexican-American women acculturate, they are more likely to become drinkers and drink with gr[illegible]ter frequency (Black & Markides, 1993). Poor dietary practices are widespread among Mexican-Americans as well. Montes (1989) reported that about 30% of the Mexican-American population, mainly women, are overweight, a

proportion two to four times higher than in the Anglo population. The data suggest that these risk behaviors tend to co-occur and probably have a common factor that relates them, such as attitude toward health promotion and disease prevention (Marks, Garcia, & Solis, 1990).

Several explanations exist for the prevalence of these risk factors and the infrequent use of preventive health services. One such explanation is a lack of information and general knowledge about cancer. Many Americans are misinformed about cancer and lack sufficient information about the disease. According to Weinberg and colleagues (1982), the general public is often surprised to learn that many cancers can be prevented by lifestyle changes and that cancer deaths can largely be prevented by early detection and treatment. The public fears cancer, underestimates its incidence, and overestimates mortality from the disease (Weinberg et al., 1982).

Mexican-Americans have even less knowledge about cancer, which partially explains the high prevalence of risk factors and underutilization of health services among this population. According to evidence from HHANES, reasons for the differential include language and cultural differences, lack of transportation, geographic inaccessibility, financial constraints and isolation from the mainstream culture. Misconceptions about cancer's causes, symptoms, and signs are often also barriers. In a study to assess the magnitude of these misconceptions, Perez-Stable and associates (1992) found that Hispanics were significantly more likely than Anglos to believe that sugar substitutes, bruises, microwave ovens, antibiotics, eating pork, drinking coffee, eating spicy foods, and breast-feeding could cause cancer. They were also less likely to know that involuntary weight loss and a change in bowel habits were possible symptoms of cancer.

Self-efficacy and health behavior

Mexican-American women often seek medical attention at a more advanced stage of many cancers than do non-Hispanics, often as a

result of their failure to get or perform screenings such as Pap smears, pelvic examinations, colorectal examinations, and breast self-examinations (Vernon, Vogel, Halabi, Jackson, Lundy, & Peters, 1991). An important factor in these women's ability and willingness to perform cancer screenings is the concept of self-efficacy, or a judgment that individuals make about their ability to perform a behavior (Lawrance & McLeroy, 1986). Perceived self-efficacy has been shown to play a significant role in adherence to preventive health programs (O'Leary, 1984); evidence indicates that among the general population, the concept is essential in developing self-management capabilities.

The concept of self-efficacy can be applied to many health behaviors. In fact, people's efficacy to exercise some control over conditions affecting their lives largely determines the extent of preventive efforts they will make (Bandura, 1986). A study by Perez-Stable & colleagues (1992) showed that many Latinos believe that cancer is God's punishment and that a person can do little to prevent getting the disease. This type of cultural information is pertinent to a discussion of self-efficacy and its effect on cancer survival, because if self-efficacy toward a particular behavior is low, the behavior is often not performed. Rhoads (1992) noted that for a behavior to have a high likelihood of occurrence, a person must have knowledge about the behavior, believe him or herself capable of performing the behavior, know how to perform the behavior, and want to perform the behavior.

Complicating Factors: Fatalismo and Marianismo

Many Mexican-Americans have attitudes that may be detrimental to cancer control efforts. *Fatalismo*, the perception an individual can do little to prevent a disease or sickness, is common in Hispanic culture. *Fatalismo* may lead Mexican-American women to assume that they cannot alter their "fate" of developing cancer (Perez-Stable et al., 1992). *Fatalismo* is compounded when Mexican-American women encounter the health care system, because their experiences often lead

them to believe that health care professionals are obstacles to receiving help. As a result, they mistakenly believe that there is no hope of surviving cancer and subsequently avoid seeking medical care (Freimuth & Mettger, 1990).

In addition, *marianismo*, a strong moral code in which honor and shame are basic concepts, regulates the relationship between Mexican-American men and women and maintains male dominance over women. Suffering is an important component of both *fatalismo* and *marianismo* because for Mexican-American women, suffering gives strength. According to Melhuus (1990), "it is a power or a force which gives life its vitality or its sustainability." As a result, Mexican-American women have little reason to *want* to prevent illnesses and diseases, because they believe that they derive strength by suffering through these hardships.

Belief in both *fatalismo* and *marianismo* contributes to the fact that Mexican-American women may be less likely than the general population to change behaviors that increase their risk for cancer or to perform preventive cancer screenings. In fact, a study by Perez-Stable and colleagues (1994) found that in a study of 844 Latinos and 510 white, non-Latinos, the Latinos felt less vulnerable to cancer. Once diagnosed with cancer, however, many of the participants in the study did not feel that having detected the cancer earlier could have made a difference in their survival. According to the study, this fatalistic attitude may be a component in the higher proportion of some cancers that are diagnosed with distant metastases among Latinos (Perez-Stable et al., 1994). Reasons cited for the differentials among Latinos and Anglos largely included attitudinal and personal factors such as fear and embarrassment rather than structural barriers such as cost and transportation.

Implications for health education

Although interventions have not typically targeted Mexican-American women, it is imperative that this ethnic population be

reached and educated about the importance of preventive cancer screenings. Clearly, efforts must be specialized for this population, because as Perez-Stable and colleagues (1992) found, even after adjusting for differences in years of formal education and other confounding variables between Anglos and Hispanics, Hispanics were still more likely to have more misconceptions about causes of cancer and to have less knowledge regarding symptoms of cancer. Their study also showed that Hispanics had less information about cancer because many have little education and do not know how to read either Spanish or English.

A study by Horm and colleagues (1992) demonstrated that although Mexican-Americans usually use cancer screening tests with less frequency than either whites or blacks, the differential almost completely disappears when they are made aware of the tests. Therefore, it seems that increasing knowledge among this population will increase the utilization of preventive cancer screenings, and will thus decrease or at least maintain their low levels of colorectal and breast cancers and decrease the incidence of cervical cancer.

Knowledge should be increased by developing materials that specifically target Mexican-American women. The most effective way to increase the use of cancer screenings is to focus on service delivery aspects (cost of care, convenient hours, etc.) and outreach aspects (education and transportation) to reach people who may not know what services are available to them and who may not be able to access the care even if they know of its availability (Estrada et al., 1990). This would alleviate some of the barriers that Mexican-American women experience as a result of their generally low socioeconomic status.

Increasing the number of bilingual staff also could lead to increased use of medical screenings (Solis, Marks, Garcia & Shelton, 1990; Chesney, Chavira, Hall & Gary, 1982), but placing bilingual personnel at any of the entry points to health care is not enough. Minority representatives who can help health care professionals better understand the Mexican-American culture are also needed. According to Montes (1989), Hispanics need "interdisciplinary and culturally

appropriate care" so that the barriers to early diagnosis and quality treatment can be broken down. They are not easy to reach, but this must be done in order to reduce their incidence and mortality from cancer (Montes, 1989).

It is also important to develop programs that address the specific health needs of the Mexican-American, because as Roberts & Lee (1980) state, "ethnic status exerts an independent effect on health and illness behavior" (p. 279). New materials need to be developed in simple Spanish to provide accurate information and address culture-specific concerns. However, it is not enough to develop programs aimed at the "typical" Mexican-American woman. Health planners must recognize the diversity that exists among this population and go beyond education to provide social support that will increase accessibility.

Data have shown that people who have a regular provider and regular source of care are most likely to utilize health care services. Hispanics, however, often lack a regular provider or source of care (Solis et al., 1990). In fact, it has been reported that differentials in usage of health care services among Mexican-Americans are not only a direct function of cultural or socioeconomic factors, but also an indirect function of inadequacies in the health care systems often used by this population (i.e., hospital outpatient clinics, emergency rooms, and public health facilities) (Roberts & Lee, 1980; Solis et al., 1990). Since they cannot afford a regular provider or source of care, it is important to either incorporate screening programs into the health care settings that they do use or to establish effective referral mechanisms that direct them to appropriate screening centers.

Mexican-Americans are at a significantly greater risk of death from cancer than are Anglos in the United States, and rates of certain cancers are increasing in the Hispanic populations (Montes, 1989). It is imperative that health educators study this ethnic subgroup and take steps to improve the ways in which they receive health care. In particular, Mexican-American women must be educated about the importance of preventive cancer screenings in an effort to increase their utilization of these tests.

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Health Education and the Media: Friends or Foes?

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In the United States, we are bombarded with tens of thousands of messages a day from various media. There are more than 1,000 television stations, 8,000 radio stations, and 1,700 daily newspapers in this country. Ninety-six percent of the U.S. population watches television an average of three hours a day (Gellert, Higgins, Lowery & Maxwell, 1994). All of these various media constantly transmit messages, and many of these messages are health-related. Newspapers have begun to carry more health stories than in past years, and more radio and television stations offer more medical or health programming (Gellert et al., 1994).

Few would dispute that the media are pervasive. Whether the media are effective in reaching the public and whether they do so accurately and responsibly, however, remains controversial. This paper classifies the media's various influences on health education as good, bad, or mediocre, and assesses the media's relationship with health professionals.

Assessing Media Impact: The Good

Some argue that the media are saviors, holding treasure chests of opportunities waiting to be opened. As an illustration, in 1982, some studies were beginning to link aspirin use in children and teens and Reye syndrome. The government initially resisted letting the public know about the adverse effects of aspirin when it is used to treat viral infections in children and teens. The FDA printed pamphlets warning parents of the association and scheduled distribution to 4,200 supermarkets. After the pamphlets were banned by the Secretary of Health

and Human Services, however, they never left the warehouse (Soumerai, Ross-Degnan & Kahn, 1992).

The press, however, started to spread the word via its reports. As a result, there is a strong association between the initiation of heavy media coverage and reduced incidence of Reye syndrome (Soumerai et al., 1992). Soumerai et al. assert that, "Because many of the aspirin-labeling requirements and federally sponsored education programs were delayed . . . the lay and professional media were the primary mechanisms for educating physicians and parents in the early years of this controversy," which occurred between 1981 and 1983 (Soumerai et al., 1992).

When it comes to educating the public, not all media releases are created equal, as is demonstrated by the following two press releases. The first release is an FDA public service announcement for radio and television.

> A rare but serious childhood disease called Reye syndrome may develop in children who have chicken pox or flu. Although the cause of Reye syndrome is not known, some studies suggest a possible association with medicines containing salicylate or aspirin. So it is prudent to consult a doctor before giving these medicines to children and teenagers with chicken pox or flu (Soumerai et al., 1992, p. 177).

The next media message appeared in *The New York Times*.

> The Government announced plans today to advise doctors and parents against using aspirin to treat children's chicken pox or flu-like symptoms because studies have linked aspirin to Reye syndrome, a rare but often fatal children's disease (Soumerai et al., 1992, p. 173).

The qualified message of the first press release contrasts with the clear, succinct warning of the second release, illustrating that some messages are much more effective in reaching the general population.

Another example of media playing a positive role in changing public behavior was orchestrated by Wechsler & Wernick (1992), who set out to inform Latino mothers with children ages 2 – 12 that low-fat

milk was better for their children than whole milk. Wechsler & Wernick distributed 25,000 flyers and produced press releases and public service announcements that received coverage in five newspapers, totaling 10 pieces and two photographs, with a circulation of 190,000.

These researchers conducted street side taste tests, and talked to local *bodegas*, or Spanish groceries, convincing them to carry low-fat milk in their stores. They convinced seven of the 46 institutions they surveyed to offer lowfat milk as well as whole milk. Their efforts resulted in "long-term, demonstrable institutional changes that will improve the nutrition habits and practices of children in the Washington Heights-Inwood community" (Wechsler & Wernick, 1992) . Wechsler & Wernick used a media blitz to inform a specific group about the dangers of a habit, to inform them of an alternative, and to persuade them to make the change.

The media also provide a positive supplement to school-based health education. In a study conducted simultaneously in Minnesota and Wisconsin, students exposed to a media-plus-school intervention were found to be at lower risk for weekly smoking than students who only received school-based intervention (Flynn et al., 1994). The study found the media-plus-school intervention could be responsible for a long-term effect and, once the intervention was over, the message continued to circulate to other children (Flynn et al., 1994).

The effects of the lower smoking risk in the media-plus-school intervention persisted two years after interventions ended, and were observed among a more diverse sample than the original test group. According to Flynn (1994), these studies suggest that "school smoking prevention programs can have substantial effects when supported by efforts outside of schools to influence perceptions of peer and community norms. The present study shows that sustained smoking prevention effects can be achieved efficiently through schools and mass media, two of the most powerful influences on young people" (Flynn et al., 1994).

While some say the media represent a primary tool in health education, others disagree. They argue that the lay press is sensationalis-

tic, inaccurate, and irresponsible. As an example, the Pregnancy RiskLine is a telephone information service designed to address the concerns of health care providers and residents of some western states. When this service began, operators noticed that a significant number of phone calls were from people who had read stories or heard information or seen something in the press about teratogens and their risks to pregnancy. The callers had questions regarding what they had seen, heard, or read (Gunderson-Warner, Martinez, L. P., Martinez, I. P., Carey, Kochenour, & Emery, 1990).

The people in charge of RiskLine wanted to find out what information the media had disseminated on this topic. They were unable to find a study that documented the content or reliability of lay press accounts about the dangers of teratogens and pregnancy, so they conducted their own study. They reviewed 56 articles in 10 magazines including *Prevention*, *Discover*, *Redbook*, *Women's Day*, *Family Circle*, and *Good Housekeeping*, and determined that the information was "...frequently misleading, alarming, and unsupported by available scientific data" (Gunderson-Warner et al., 1990). About 45% of the articles were considered accurate, while 55% were scored as misleading or inaccurate. Forty-six percent were rated as alarming, 14% provided a sense of false security, and 39% provided a balanced presentation (Gunderson-Warner et al., 1990).

Other authors have raised concerns about the effects of incorrect or incomplete information on the abilities of obstetric-care providers and pregnant women and their families to make informed decisions. Due to media messages, some women are under the impression that their pregnancies are at risk. For example, many women became anxious and thought they needed diagnostic procedures, or possibly abortions, because they were exposed to spray adhesives and had heard that this exposure could lead to birth defects (Gunderson-Warner et al., 1990). Gunderson-Warner et al. cite many other examples of overreaction to media stories regarding Agent Orange, progestational agents, birth control pills, hot tub use, and aspartame. Not only is the misinformation dangerous, it fuels the possibility of legal action from parents looking for the source of their children's birth defects.

A study by Yeaton, Smith, and Rogers (1990) evaluated the ability of college-educated lay persons to respond correctly to a series of questions immediately after reading an article published in the popular media that had reported health research results. The overall number of errors approached 40%, falling between one-third and one-half for each of five topics (Yeaton et al., 1990), meaning that many people have almost a 50/50 chance of getting inaccurate or incomplete information by virtue of reading articles reporting health research results published in the popular media. Whether the press is reporting inaccurately or writing unclearly, the results are the same: when it comes to reporting on medical research findings, the public isn't getting accurate information.

The Mediocre

Still others are willing only to concede that evidence suggests media messages reach the public, but the messages have little or no effect on them in either a positive or negative light. A study conducted by Haxby, Sinclair, Eiff, McQueen and Tower (1994) to examine characteristics and perceptions of patients regarding treatment with nicotine patches found that the media informed patients about the availability of the patch 36% of the time, while 25% heard about it from their physician. Many different approaches, including the media, have been used to promote the use of nicotine patches for smoking cessation. Some manufacturers of the patch seem to view the media as just another vehicle to inform the public about existence of the patch, but aren't necessarily trying to use the media extensively to change behavior or increase use of the patch.

It is generally accepted that when people view someone with a particular disease as similar to themselves, their perceived level of susceptibility to that disease will increase. When Earvin "Magic" Johnson announced his HIV status to the public, many African-American men experienced a connection to the disease, because Johnson was perceived as someone they knew (Kalichman, Russell, Hunter & Sarwer, 1993). They assert that

> This media event may be the most powerful yet to affect heterosexual men's perceptions of AIDS. Images of Magic Johnson during the course of media coverage, therefore, seem to have affected interest in AIDS, because the disclosure was personally relevant to men, particularly African-American men, in much the same way as knowing someone with HIV-AIDS. (pp. 889-890)

Interest in HIV-related information, phone calls for testing, and household discussions initially increased dramatically (Kalichman et al., 1993), but within a month, these levels returned to normal. Johnson's announcement had a brief impact, possibly without any long-lasting effects. The extensive media coverage opened a window of opportunity that health educators could have used to provide more information and education, but data indicate that the opportunity was not taken advantage of (Kalichman et al., 1993).

The Media and Health Professionals

Some health educators, health officers, doctors, nurses, dietitians, and scientists regard the media with caution. They are skeptical of journalists' intentions and question their politics or agenda. To an extent, these people may have a legitimate complaint regarding the lay press. If, for example, a scientist's findings are trivialized in a newspaper feature article, he or she would have a right to be upset, particularly if the data were reported or interpreted incorrectly (Jones, 1993). At other times, health professionals may feel that "the best part was left out" (Goodman, 1993), as if the journalist missed the whole point or was simply practicing sloppy journalism.

But health professionals need to remember that journalists have a specific job to do. As investigative reporters and the eyes of the public, journalists have a responsibility to challenge the life-and-death action of health professionals, particularly when so much medical research is funded by the public (Altman, 1993). Altman says

> Journalism's role is not limited to reporting the latest advances in medicine and public health, critically important as that function may be. Journalism seeks greater accountability, in part by

> uncovering waste and dishonesty. Journalism also aims at pointing out the need for new ideas. Another journalistic function is to be a provocateur, and one way of doing that is by identifying trends in science and medicine as reported in the professional journals. For lay people, media journalism is the main form of continuing education after they finish their formal schooling.... Journalism has to compete for the public's attention and time. Thus, journalism must find the quickest and most interesting way to entice readers into a story — no matter how important or trivial the science might be. (p. 203)

The Future of Media/Health Relations

Both health professionals and the lay press have expressed a desire for improved communication between their professions (Gellert et al., 1994). The following strategies for health professionals dealing with the media, which have been suggested over the past few years, would ensure that the public would be served, while at the same time realizing the responsibilities and abilities of both groups.

1. Support accuracy in reporting by having statistics readily available for the reporter. Be honest with reporters. If health professionals mislead them and they don't find the truth, the public who read the piece have been done a great disservice. If journalists do find an error, they may not trust the professional again and he or she will be left without a way to communicate with the public.

2. Help educate reporters. Training in media relations may be advisable for health professionals. Certifications should be established for medical journalists (Gellert et al., 1994). Journalists would be more likely to let the health officials have input in curricula designs if the health official was educated in the formulation of such projects (Gellert et al., 1994).

3. Establish routines with the media. Let them know what to expect, and then be consistent. Be forthcoming with information and respect their deadlines.

4. Let the media know that science is not boring, and be able to back it up (Schwitzer, 1992). Help the media find ways to make health science more interesting.

5. Find ways to collaborate with the media to advance health education. Such collaborations are a significant component of public health campaigns in emerging countries and should be used more wisely in the more developed world (Role of the Media, 1994). Health education can reduce the negative health influences of products such as tobacco. Suggest ways to infuse health education into the media (Matthews & Dix, 1992). For example, several prominent cartoonists received letters from a health educator interested in increasing safety belt use. The letters asked if they would consider drawing safety belts on passengers in vehicles. Some of the cartoonists were happy to comply and thanked the health educator for the suggestion (Matthews & Dix, 1992).

6. Develop a measure of scientific quality to rate the quality and accuracy of articles so that journalists have an idea of what is good, what is bad, and how they can improve (Oxman, Guyatt, Cook, Jaeschke, Heddle, & Keller, 1993).

7. Help the public not to be victimized by health quackery (Short, 1994). As Short says

> People believe the headlines. In an interview on radio or television, make your point quickly. Make a positive stand. Know where you are coming from and be firm. Do not debate diet-book authors or pill promoters. Don't give them your valuable air time. Take time to read the current scientific literature and general publications. Learn how to speak, smile, wear make-up and dress for the media. Avoid speaking in health buzzwords. React continually to misinformation to combat quackery. Keep the message positive. Don't tell them what not to do — tell them what to do. (p. 610)

8. Realize that health professionals cannot use the media as a soap box. They cannot report information for us if it is not truthful and in some way relevant or significant. Realize the limitations, rules, ethics,

and responsibilities of journalists. Don't ask them not to report bad things. Their job is to report everything.

Conclusion

As health professionals, we must seek out ways to help journalists do their jobs responsibly. By forming an alliance with the media, we can get our important messages through to the public. A health education message passed from a doctor to a patient can be supplemented by well-written public service announcements. We should continue the work of health promotion through prevention, developing cures, and treatments. The media can help us educate the public by broadcasting the findings.

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The Seropositive Child: Evolution of School Policy in the Age of AIDS

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When we hear stories of angry "villagers" rioting in the streets and burning villages to the ground to eradicate a "monster" that lives among them, we often think of fictional characters like Frankenstein. Unfortunately, these images have become real in the age of AIDS. The "villagers" of Arcadia, Florida, in ignorance and fear of HIV/AIDS, destroyed a family's home, leading many to ask why persons with HIV/AIDS have become modern-day "monsters" stigmatized by a terrified, irrational society (Reed, 1988).

Many critical issues stem from the spread of HIV/AIDS around the world. Society has been forced to acknowledge attendance of seropositive children in the public schools and to formulate school policy with these children in mind. Creating sound school policy in the age of AIDS requires evaluation of the issues and implications related to HIV/AIDS incidence in the population, modes of transmission, evolution of school policy and who needs to know the HIV status of the child.

The Epidemiology of AIDS

The incidence of HIV/AIDS in the United States population continues to increase at an astounding rate. HIV/AIDS infection among women is rising rapidly, with 85% of reported cases occurring in females of childbearing age. Of the 40,702 cases of HIV/AIDS in women reported to the Centers for Disease Control and Prevention (CDC) as of Fall 1993, 49% of the cases were attributed to injectable drug use, while another 8,402 women reported sexual relations with an injectable drug user. Recent trends indicate that females are acquiring

HIV/AIDS more often through heterosexual contact than through injection drug use. Women of childbearing age who engage in risky behaviors not only place themselves at risk, but expose their unborn children to the same danger if they become pregnant (Willoughby, 1994).

Of 4,710 pediatric cases (ages 0-12) reported to the CDC in June, 1993, 87% were children born to HIV-infected mothers. The remaining 13% were attributed to hemophilia and transfusions of blood and blood components. Adolescents (ages 13-21) fall into a different category, with 3,038 cases of AIDS reported at the end of 1992 (Willoughby, 1994). Causes of infection in this group include engaging in unprotected sexual contact, using intravenous drugs, and having blood disorders requiring transfusions. Regardless of how these children contracted the virus, society has an increasing population of HIV/AIDS-infected children. Due to more effective treatment and medical care, these children live longer and in relatively good health (Weiss and Louria, 1994). Consequently, the HIV/AIDS epidemic, once faced exclusively by the medical community and social services, now affects the public schools as well.

Transmission of HIV

The appearance of HIV-infected children in the schools has evoked concern from all involved. Much of the public's fear stems from myth and ignorance about how HIV is transmitted. HIV infection follows three routes of transmission, all of which have been well documented scientifically. The virus may be passed from partner to partner through exchange of infected sexual fluids, through infected blood and blood products, and from mother to fetus, in utero or through breast milk. HIV has been isolated in other body fluids such as tears, urine, saliva, and feces, but the virus is not transmitted through these fluids (Stine, 1993).

HIV has been categorized as a communicable disease, but transmission does not occur through air or casual contact (Black, 1986).

Studies conducted in homes with an infected family member present failed to document transmission through casual household contacts (Kerr, 1988). These results hold important implications for the school setting. In reality, automobile accidents, voluntary and involuntary exposure to tobacco smoke, and substance use pose greater risks to children than does casual contact with an HIV-infected child (Stine, 1993, p. 347). While the possibility of HIV transmission occurring in a school setting is remote, enrollment of seropositive children in school still evokes volatile reactions (Black and Jones, 1988).

Evolution of School Policy

By the late 1980s, many public school systems had been confronted with the presence of children with HIV. School policy regarding admittance of HIV-infected children evolved through many forms and stages, none of which was implemented uniformly, leading to marked geographic and philosophic differences in how the issue was addressed. A chronological evaluation of policy progression is difficult; however, five elements emerged as important considerations in overall policy development.

Total Exclusion

One early case involving three HIV-positive children — the Ray boys—was handled with a policy of total exclusion. The three boys were infected through transfusion of contaminated blood products used to treat hemophilia. After being diagnosed with HIV, the boys were banned from school by school officials in DeSoto County, Florida. Many people felt the boys were being discriminated against based on their HIV status. A year-long legal battle ensued, during which time the family moved to Alabama.

Lack of acceptance followed the boys, and they were banned from school in Alabama. The family returned to Florida and fought for the right of their children to receive an education. A U.S. District

Court ruling ordered that the children be readmitted to school. The ruling prompted rallies against their presence, threats both to the family and the school, and finally culminated in destruction of the Ray family home and personal property. The family fled and enrolled the boys in yet another school (Reed, 1988).

The Ray boys were readmitted to school only after legal intervention, with the court disallowing any policy of total exclusion. The court makes decisions based on the medical evidence available, not on the fears and prejudices of the community. In the absence of medical evidence that HIV can be contracted through casual contact, it seems unlikely that a court would rule otherwise (Helm, 1989). In similar cases, the court acknowledged that persons with HIV qualify as handicapped under Section 504 of the Rehabilitation Act of 1973 (Martin, 1991). The act states that no "otherwise qualified individual with handicaps... shall ... solely by reason of his handicap, be excluded from the participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving federal financial aid..." (Martin, 1991, p. 332).

Case-By-Case Evaluation

Following the ruling in the Ray case, children with HIV attending a public school were evaluated on a case-by-case basis. School policy was being shaped and tangible guidelines were being followed, representing a change from the nonbinding "recommendations" and erratic decision-making of the past. This case-by-case approach, which basically followed guidelines from the CDC, guided policy development in Wilmette, Illinois. The policy stated that children "should be admitted to the school on a case-by-case basis and upon recommendation of the attending physician" (Reed, 1988). The CDC guidelines indicate that children with HIV should be allowed to attend school if they are continent, if they have no open or oozing lesions, and if they do not bite other children (Black, 1986).

Why did the Wilmette community respond with compassion to weave "a protective web around the HIV-infected child," while Arcadia, Florida parents "withdrew their children from the school and destroyed the HIV infected child's home and its contents"? (Reed, 1988). The difference in community reaction can, in part, be attributed to the fact that the Wilmette schools developed an AIDS policy *prior to* first enrollment of a seropositive student, while the school in Arcadia had no such policy (Martin, 1991; Reed, 1988). Moreover, the Wilmette community had access to education about HIV/AIDS and access to health professionals (Reed, 1988).

Other policies of this same period favored a case-by-case approach in which the HIV-infected child was temporarily excluded from school. Such exclusions were enforced for any individual with a communicable disease, not just those with HIV or AIDS (Helm, 1989). The exclusion could be terminated following evaluation of the child's medical record by a team consisting, in most cases, of the school nurse, principal, parents of the infected student, and the student's physician. In a Chicago policy, the decision to place a child back into the regular classroom or into a special setting was determined using the previously cited CDC guidelines, assessment of health risk to the student, and potential risk to others. In some policies, children were excluded in the interest of their own health. Outbreaks of chicken pox or other infectious diseases would place the immunosuppressed child at risk, so exclusion was thought to be prudent (Martin, 1991). These policies represented working models designed with forethought and developed based on facts.

Shift of Power

Recent policies have continued previous trends by building on effective aspects and eliminating approaches not based on accurate information. For example, in 1991 the American Academy of Pediatrics (AAP) updated and modified guidelines regarding school attendance of HIV-positive children. One important recommendation

substantially curtailed the power of schools. According to the report, most school-age children and adolescents infected with HIV should be allowed to attend school without restrictions, provided the child's physician gives approval. Additionally, Public Law 94-142, ensures those infected with HIV access to education in the least restrictive environment possible (Palfrey, Fenton, Lavin, Porter, Shaw, Weill, & Crocker, 1994). Many recently adopted policies, such as AAP guidelines and PL-142, indicate increasing concern for the rights of the children involved.

Universal Precautions

Adoption of universal precautions for communicable diseases in school policies is increasing. Until recently, the issue remained a concern for hospitals and the medical establishment, but now it affects schools as well. Many schools are establishing staff training for implementation of universal precautions, providing staff members with latex gloves, developing instructions as to methods of handling body fluids and, in essence, treating all people as if they could be infected (Lavin, Porter, Shaw, Weill, Crocker, & Palfrey, 1994). The policy for schools is similar to policies which existed for years in the medical field.

"Need to Know"

The issues of confidentiality and disclosure are now at the forefront of policy discussions, particularly the question of who needs to know the HIV status of the child attending school. Initially, issues of confidentiality were not strictly enforced, and parents had little say about who did or did not receive notice of their child's HIV status. According to Majer (1992), virtually all guidelines concerning management of HIV infected students in school settings include the recommendation that only those people having a "need to know" about the student's infection be informed. A problem, however, has stemmed from this. What persons legitimately need to know? The principal?

Teachers? Bus drivers?

This decision should be based not on who has a personal interest in the information, but on preventing unnecessary transmission of the information, ensuring safety for the infected child, and respecting the family's decision concerning confidentiality (Majer, 1992). Medical personnel may only disclose a child's HIV status to school officials with expressly authorized informed consent by the child's parents or legal guardians (Harvey, 1994). In a Dade County, Florida policy update, a specific consent form was incorporated to designate those persons allowed to disclose a student's HIV status, if any (Bureau of Professional Standards and Operations, 1994). This consent form is completed by parents of the child. Whereas parents initially had little control, they now have been afforded certain rights of confidentiality and personal preference as long as the safety of others is not jeopardized.

Conclusion

To fully understand the complex relationship between the HIV-infected child and the rest of society, it is necessary to evaluate the incidence, modes of transmission, evolution of school policy, and issues related to disclosure and confidentiality. With medical facts incorporated as basic guidelines for the future, policy changes can be adopted rationally, so that emotion will not supersede knowledge of the truth. In this way, society can hope to eliminate fearful, irrational, responses to HIV-infected children in schools.

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Expanded Use of Champion's Health Belief Scale: Breast Self-Examination and Sexual Orientation

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As breast cancer reaches epidemic proportions among American women, efforts are also growing to identify factors that influence early cancer detection behaviors. Psychometric scales are increasingly used to identify attitudes and beliefs about health risks and preventive health behaviors. Specifically, many scales seek to measure how women feel about breast cancer and to predict the likelihood they will engage in such early detection activities as breast self-examination (BSE) and mammograms.

Champion's health belief scale is a psychometric instrument measuring the constructs of the Health Belief Model (HBM) for breast self-examination and mammography. The HBM is one of the most widely used theoretical models for BSE and mammography research (Champion, 1984, 1985, 1988, 1993; Fletcher, Morgan, O'Malley, Earp, and Degnan, 1989; Gray, 1990; Hallal, 1982; Harrison, Mullen, and Green, 1992; Hill & Shugg, 1989; Hirschfield-Bartek, 1982; Kin, 1981; Lashley, 1987; Lauver, 1987; Massey, 1986; Redeker, 1988; Rutledge, 1987; Trotta, 1980; Wyper, 1990). In addition to studies that support the use of the HBM as a reliable predictor of BSE and mammography use, many studies have identified significant sociodemographic attributes (or HBM "modifying factors") that appear to impact women's HBM responses as well as practice of BSE and mammography (Champion, 1988; Fletcher et al., 1989; Gray, 1990; Hill and Shugg, 1989). These attributes include age, race, residency (urban vs. rural), educational level, and relationship status.

The current study is a pilot project investigating sexual orientation as a modifying factor of the HBM and breast self-examination. Several studies (Bradford and Ryan, 1988; Coward, 1992; Johnson,

Smith, and Guenther, 1987; Buenting, 1992; Schmitz, 1993, Trippet and Bain, 1993) have found differences in gynecological health care practices and attitudes among heterosexual, bisexual, and lesbian women. Among other findings, it is clear that lesbian women are less likely than both bisexual and heterosexual women to receive an annual gynecological exam. Zeidenstien (1990) noted that this "under-examination may increase the rates of certain illnesses among lesbians: for example, cervical and breast cancers are typically screened for and detected at early stages with regular gynecological examinations" (p. 17).

The importance of early detection and treatment of malignant neoplasms for breast cancer survival and the apparent variations in health care practices among women of different sexual orientations underscores the importance of determining the prevalence of breast self-examination and factors that influence this practice. This pilot study provides further evidence of instrument reliability for sexual orientation in preparation for a more complete investigation of the phenomenon.

Theoretical Framework

Establishing reliability — a "quest for dependable and consistent measures" — is of paramount importance (Torabi, 1988, p. 186). Without satisfactory reliability, any conclusions drawn from the data are suspect. Establishing reliability not only allows confidence in the information garnered from use of the instrument, but also reveals limitations that must be addressed in the current study, and suggests areas for future improvement. It is important to distinguish between *internal consistency* reliability and *stability* or *test-retest* reliability. Consistency over time is the domain of test-retest reliability: does the instrument consistently measure the construct at different points in time? Internal consistency refers to "the degree the instrument measures one phenomenon in a consistent manner" (Green & Lewis,1986, p. 85). Because this pilot focused on different subpopulations, internal consistency reliability is of particular importance. As Suchman (1967)

explains, "the more important it is to know the degree of difference, the more attention must be paid to unreliability" (p. 119).

Classical error theory states that two sources of variation exist in any score: the "true" score, and error. In other words, a total observed score on a set of measures is made up of an individual's "true" score (which requires that the test be conducted under perfect circumstances, making this score unobtainable), and an error score. This error score can come from many sources: the instrument itself, the circumstances of testing, and the variations in any individual from hour to hour, day to day. Rearrangement of the equation

$$X = T + e \quad \text{(Observed score = True score + Measurement error)} \quad \text{to}$$
$$T = X - e$$

illustrates that the smaller the error score, the more similar X (observed score) and T (true score) will be. The reliability coefficient quantifies this relationship. It is the correlation between the true score and the observed score for a set of individuals using an instrument. Thus a high correlation for internal consistency reliability indicates that the data collected using that instrument are reliably consistent with that group of individuals' true scores (Green & Lewis, 1986; Hopkins, Stanley, and Hopkins, 1990; Fink, 1993).

This project focused on the reliability of an instrument designed to measure the constructs of the Health Belief Model as a predictor of breast self-examination (Figure 1). Originally developed by Hochbaum, Leventhal, Kegeles, and Rosenstock in the 1950s, the HBM allows analysis of an individual's motivation toward health behaviors at the level of individual decision making (Champion, 1984; Mikhail, 1981). As a predictive model, the HBM posits that an individual's state of readiness to participate in any given health-related behavior is a result of certain beliefs and attitudes. These beliefs are represented by the four original constructs of the HBM: (1) perceived

susceptibility, (2) perceived seriousness, (3) perceived benefits, and (4) perceived barriers.

According to the HBM, for a person to pursue a behavior explicitly designed to prevent, inhibit, or cure a disease, the individual must (1) believe that she is personally susceptible, (2) believe that occurrence of the disease will have a significant negative impact on her life, (3) believe that the anticipated behavior will effectively avoid (diminish, cure, etc.) the disease, and (4) believe that the barriers to the anticipated behavior are not insurmountable or do not outweigh the benefits. Additionally, an individual may be stimulated by a "cue to action," which may be either internal or external, such as finding a lump in the breast or seeing a commercial advocating breast self-examination (Gray, 1989; Champion, 1984).

In 1974 Becker introduced health motivation as part of the HBM as an additional variable in health-related behavior. Health motivation refers to the degree of interest in health matters and how this interest is manifested in specific behavior. Inclusion of this concept has added significantly to the predictive abilities of the HBM (Champion, 1984). An additional construct used in Champion's scale is "confidence" (1993). This construct, equated by Rosenstock, Strecher, and Becker (1988) to self-efficacy, refers to the "belief that one can successfully execute a behavior" and was included in the instrument based on review of studies that found "significant positive associations . . . between BSE and self-efficacy" (Champion, 1993, p. 139).

The purpose of this study was to determine the reliability of construct subscales of Champion's health belief scale — perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cues to action, health motivation , and confidence —within and compared across the sexual subpopulations of heterosexual and homosexual women.

Method

The first portion of this paper-and-pencil instrument was developed by the author to garner demographic, sexuality, "cues to action," and health behavior information. Included were questions regarding age, educational level, occupation, sexual orientation, and history of sexual intercourse with men. Three "cues to action" questions asked about the last time the woman was shown how to perform breast self-examination by her health practitioner, by a health educator, and about the visibility of BSE information in her home. Two final questions pertained to early detection behavior: the last time the woman had a mammogram and frequency of BSE, if at all.

The second portion of the instrument consisted of 42 statements that make up the BSE section of Champion's scale. This scale is a product of significant validation and reliability work by Champion (1984, 1985, 1988, 1993). The following citations regarding validity and reliability of the scale are from Champion's most recent BSE/HBM publication, *Instrument Refinement for Breast Cancer Screening Behaviors* (1993):

- Content validity was established by review of an "advisory panel whose members were experts in scaling and/or measurement of the HBM" (p. 139).

- Predictive validity was "assessed by regressing the behavior of breast self-examination on the six attitudinal subscales." All *F* values were found to be significant, with the combined variables explaining 24% of the variance in BSE (pp. 141-142).

- Internal consistency reliability was calculated for the subscales using Cronbach's alpha and ranged from .80 to .93.

- Test-retest reliability was satisfactory with coefficients ranging from .45 to .70. Champion notes that the lower

coefficients may have been due to the two month test-retest period (p. 142).

Champion's scale is designed to measure the HBM constructs (perceived susceptibility, seriousness, barriers, and benefits) and the two additional factors (health motivation and confidence) by response to a 5-item Likert scale, consisting of (a) strongly disagree, (b) disagree, (c) neutral, (d) agree, and (e) strongly agree. These statements included "My chance of getting breast cancer are great" (susceptibility), "I am afraid to think about breast cancer" (seriousness), "When I do breast self-examination I feel good about myself" (benefits), "Breast self-examination will be embarrassing to me" (barriers), "I am able to find a lump the size of a dime" (confidence), and "I want to discover health problems early" (motivation). The number of items per subscale were: susceptibility (5), seriousness (7), benefits (6), barriers (6), confidence (11), motivation (7).

A convenience sampling method — "snow-ball" sampling —was utilized. This technique is frequently used to gather information among stigmatized minorities, where entry can be problematic for both the respondents and researcher. Gaining access to the lesbian community, and then using peer networks to acquire completed questionnaires, provided both the necessary access to an otherwise unidentifiable population, and protection against possible discrimination. For sampling consistency, both the lesbians and heterosexual women were surveyed in this manner. "Snow-ball" sampling consists of asking friends, colleagues, and relatives to complete a questionnaire and having these persons, in turn, ask their friends, colleagues, and relatives. The limitations of convenience sampling include the potential for biased data that is not representative of the general population and therefore nongeneralizable (Fink, 1993). These considerations were taken into account in the conclusion of this pilot study.

Each respondent was given a large manila envelope containing a cover letter that explained the project, its purpose, assuring anonymity, and inviting phone or mail contact with the researcher should they

have any concerns or questions. A BSE pamphlet was included and a preaddressed, stamped envelope was provided. Seventy-eight surveys were distributed and 45 returned, representing a 60% return rate. It should be noted that in response to a low initial return rate from lesbian women, additional surveys were sought from this population to match the heterosexual surveys received. According to respondents, the survey took approximately 10-12 minutes to complete.

Results

The results are organized as follows: demographic frequency data, comparative descriptive statistics (Table 1), Cronbach alpha reliability coefficients (Table 2), and predicted coefficients using Spearman-Brown Formula for item expansion (Table 3). Discussion of these results, and problems with instrumentation, are included in the next section.

The Statistical Package for the Social Sciences was used to calculate frequency data and reliability coefficients. About half of the sample responded that they were homosexual and the other half (22) that they were heterosexual when asked "what is your sexual orientation?" and given the options (1) heterosexual, (2) bisexual, (3) homosexual, (4) other, (5) not sure. The majority of the respondents (75.5%) were between the ages of 35 and 50 years. While over half stated that they were in professional or administrative occupations (57.8%), the remaining half was divided between Clerical (13.3%), Trade/Production (6.7%), Student (13.3%), and Other (8.9%). Similarly, almost two-thirds of the respondents had attained graduate or professional degrees (64.4%), another 22.3% had baccalaureate degrees and/or some graduate schooling, and the remaining 13.3% had finished high school or received a GED. As was expected, given the "snowball" sampling technique, the sample populations were fairly homogeneous. Frequency data on "cues to action" questions and early detection behavior will not be discussed due to space limitations and because they are not directly salient to the issue of HBM measurement reliability. Primary

descriptive statistics are helpful, however, for comparing to Champion's data. Table 1 shows sample means and standard deviations for pilot subpopulations and Champion's 1993 study.

Table 1. Descriptive Statistics

	Heterosexual		Homosexual		Champion	
	mean	sd	mean	sd	mean	sd
Susceptibility	2.61	.48	2.63	.46	2.54	.81
Seriousness	2.67	.58	2.75	.52	3.25	.68
Benefits	3.77	.55	3.88	.41	3.88	.52
Barriers	1.95	.83	1.85	.48	2.02	.60
Confidence	3.62	.58	3.70	.49	3.31	.57
Motivation	4.00	.58	3.42	.74	3.78	.59

Cronbach's alpha (CA) coefficients for the sample populations are presented in Table 2 along with Champion's 1993 findings. Cronbach's alpha "is a summary measure of internal consistency based on a calculation of the amount of intercorrelation or similarity of all items examined simultaneously" (Green & Lewis, 1986, p. 87). The choice of CA over the more common method of split-half was made based on Torabi's findings that "CA coefficients are supposed to be more stable" because they are not subject to problems of how to 'split' the items into halves, but rather are based on "every possible combination" of items in the scale (Torabi, 1988, p. 189).

Table 2. Reliability Coefficients

Subscale	Heterosexual	Homosexual	Champion (1993)
Susceptibility	.27	.29	.93
Seriousness	.72	.64	.80
Benefits	.64	.54	.80
Barriers	.87	.69	.88
Confidence	.86	.85	.88
Motivation	.72	.83	.83

As can be seen in Table 2, pilot reliability indicators were less stable and lower on almost all pilot subscales than Champion's findings. Despite this instability, alpha coefficients for the subpopulations ranged from .54 to .87 (with the exception of susceptibility). These meet Torabi's (1994) criteria for reliability coefficient tolerance or acceptability: "0.80 and above – good; 0.60-0.79 – acceptable; 0.40-0.59 – tolerable with justification; less than 0.40 – serious reservation." Of the sample subscale alphas (again with the exception of susceptibility), only one (benefits) was below the "acceptable" range.

As noted, while Champion's (1993) susceptibility subscale coefficient was strong (.93), pilot reliability indicators for this subscale were quite low. Table 1 reveals that standard deviations for pilot susceptibility subscales were significantly lower than Champion's. This lack of spread among the observed pilot item scores (i.e., less variability) may be due to the homogeneity of the sample population. As Torabi (1988) notes, lower heterogeneity of scores can deflate reliability coefficients.

Torabi's 1988 study investigated the effect of the number of items per scale on reliability coefficients, and concluded that less than 18 items per scale significantly deflated reliability coefficients. Therefore, new reliability coefficients were calculated using the Spearman-Brown Formula for predicting the effect of changing test length on a measure's reliability:

$$\rho'_{xx} = \frac{L\rho_{xx}}{1 + (L-1)\rho_{xx}}$$

where L = "the ratio of 'new' test length to 'old' test length . . . and assumes that the additional items and the original items are parallel samples of items from the same universe of items."

ρ_{xx} = "reliability correlation of original test."

ρ'_{xx} = "reliability coefficient of the new test."

(Hopkins, Stanley and Hopkins, 1990, p. 127)

Table 3 shows predicted coefficients calculated if each subscale consisted of 18 items. With two exceptions, all alpha coefficients were elevated to the "good" range.

Table 3. Spearman-Brown Predicted Reliability Coefficients

Sample	Suscept.	Serious.	Benefits	Barriers	Confid.	Motiv.
Heterosexual	.87	.87	.84	.95	.90	.87
Homosexual	.60	.82	.78	.87	.91	.92

Discussion

All validity issues associated with this instrument — criterion, content, and construct —are assumed to be sufficient based on the previous work of Champion (1984, 1993). While pilot reliability subscale alpha coefficients were less stable and generally lower than Champion's 1993 findings, the majority were "acceptable" or "good." Only the subscale coefficients for susceptibility were so low as to be considered unacceptable.

These differences in alpha coefficients among and between the sample populations may be due to several factors: very small sample groups, small number of items per subscale, and measurement error. Torabi found that "coefficients based on small groups of participants may fluctuate from one group to another" (1988, p. 189). In the same study, Torabi found that less than 18 items per scale significantly deflated reliability coefficients and recommends minimum number of 18 items per scale. Recalculation of subscale coefficients using the Spearman-Brown Formula for predicting the effect of changing test length on a measure's reliability (calculated if each subscale consisted of 18 items) elevated the majority of coefficients into the "good" range. The exceptions, homosexual susceptibility and benefits, met the standards of "acceptability."

The low original coefficients for susceptibility remain problematic. If compared against Champion's data and methodology two conclusions are possible: (1) this attitudinal construct is profoundly impacted by the modifying factor of sexual orientation, or (2) differences in the instrument and/or sampling and testing procedures introduced significant measurement error. While the former hypothesis bears further investigation, there was a serious instrument design error committed which was revealed by this pilot study: the various subscale items were not scattered or intermingled throughout the HBM section. Thus, the first five statements to be answered using the Likert scale, immediately after somewhat invasive sexuality questions, were those of the susceptibility subscale. Respondents may have been anxious and/or adjusting to the new format of responses.

Conclusions and Recommendations

Findings from this pilot study demonstrate overall satisfactory measurement reliability for Champion's health belief scale for the sample populations: heterosexual and homosexual women. Lower-than-expected and unstable coefficients indicate potential problems, however, and illustrate the importance of heterogeneity of participants, adequate sample size, and call into question the use of subscales with fewer than 18 items per scale. Recommendations for future use include employing sampling techniques that ensure greater heterogeneity and representativeness of participants and intermingled ordering of subscale items. A larger sample size will, of course, be sought in the final study. The problem of low item-per-scale ratio suggests two approaches: (1) creation of additional items and re-validation of the instrument, or (2) careful replication of Champion's sampling technique and sample size to reduce any additional sources of measurement error. Given Champion's thorough validation work, the latter approach should be sufficient to ensure the instrument's ability to consistently measure HBM constructs for the study of sexuality as a modifying factor of the HBM and the prediction of breast self-examination practice.

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Women's Dependence on Fad Dieting: A Result of Cultural Influence

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Introduction

The image of the "ideal woman" has changed many times over the centuries. In the fifteenth century, a "full-figured" woman was considered attractive, whereas today the same woman would probably be considered overweight. Women during the Civil War period wore corsets to meet society's standards, and often suffered damage to their internal organs as a result. In the 1960s, Twiggy was the standard and the "look" of the day was adolescent and underweight (Stone, 1993). Unfortunately, women are still expected to fulfill society's expectations of the "ideal woman," regardless of how unrealistic those expectations are.

A natural, "normal-sized" body rarely generates respect in our thin-obsessed society. Evidence of this obsession with thinness is abundant. Americans, especially girls and women, are bombarded daily with messages from the mass media (e.g., diet industry) that dictate what constitutes an "acceptable" physique. Commercial advertisements make it clear that manufacturers want their consumer audience to believe that being thin is essential to leading a happy and fulfilling life.

Has the dieting industry victimized women in its promotion of fad dieting and unrealistic body images? Increasing numbers of women struggle on the diet "roller coaster" as they strive desperately to live up to twentieth-century standards. The results are often health-threatening eating disorders, malnourishment, and bouts of frustration and depression resulting in repeated cycles of destructive behavior.

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The issue of women's dependence on fad dieting has been addressed numerous times through research, education, and prevention programming. Each effort has met with minimal success. Despite increased awareness of body image and the prevalence and consequences of eating disorders, Western culture does little to validate those with a "less-than-ideal body." Instead, the dieting and advertising industries continuously issue quick fixes and empty promises of achieving the perfect figure. Much more so than men, women are expected to meet body standards that cannot be achieved without sacrificing long-term health.

Cultural Influence on Dieting

American women are in conflict with their bodies. Every day, they wage the battle against weight in their quest for the perfect body. The media play a huge role in projecting the image of the body that is socially acceptable, and, in some women's opinions, mandatory. These unattainable body images ultimately jeopardize women's mental and physical health (Brown & Jasper, 1993). Having gained a "very fine-tuned idea" of what constitutes an acceptable body, women rapidly internalize this current standard of beauty (McCarthy, 1985). Regardless of how unrealistic the standards are, women engage in unreliable and health-threatening methods to acquire the body American society deems appealing.

Western culture holds the belief that weight can be controlled. Consequently, being overweight has become a moral issue, with obesity signifying laziness and lack of self-control. The unfit are perceived to be weak of character and therefore "bad" members of society. Stone points out that physical flab is considered immoral flab (1993, p. 70). Those who conform to society's standard of thinness are viewed as being successful, dependable, and self-respecting—perceived attributes that make them valued members of society. It is not surprising that Americans spend billions of dollars on diet-related products and services in their attempts to gain societal acceptance (Stone, 1993).

Social consequences of failing to conform to an idealized standard differ greatly for women and men in this country, because society values women for their appearance. Men, by contrast, are valued for their wealth and success. Brown & Jasper assert that "Because the way women's bodies look bears greatly on how other people relate to them and is directly connected with women's economic value in society, women learn that looking good is a form of currency in the world" (Brown & Jasper, 1993, p. 19). As a result of this concept of social value, in which women are valued for their appearance, many women develop chronic eating disorders, and suffer feelings of depression, guilt, and self-hate (Grodner, 1992).

Dieting and weight preoccupation have become an accepted and normal way of life for American women. It is estimated that 85% of all American women claim to "feel fat" (Stedman,1985). In one study, between 50% and 60% of normal-weight women claimed they needed to lose weight. In actuality, only 20% of American females meet the medical definition of obesity. Clearly, a discrepancy exists between womens' actual appearance and their perceived body images. Distorted body images are primarily a result of society's depiction of the ideal body as being that belonging to fashion models, who are well below the average weight of women (McCarthy, 1985).

Regardless of rigorous efforts to obtain ideal bodies, 90% of women who diet and lose weight gain it back within two years. Even more disheartening is the fact that most women gain back more weight than they initially lost. Because the body's starvation mechanism takes over when caloric intake is greatly reduced, the more diets that a woman engages in, the harder it becomes for her to lose weight. Metabolism (the rate at which calories are expended) drops as the body tries to conserve calories and maintain weight (Grodner, 1992; Stedman, 1985).

When weight is lost too rapidly, muscle mass is lost in addition to fat. Because muscle requires more calories for maintenance than fat, a body with reduced muscle mass burns fewer calories. When weight is gained back, a slowed metabolism facilitates the storage of weight as fat

rather than muscle. This pattern of events illustrates why so many diets are unsuccessful in maintaining long-term weight loss (Grodner, 1992; Stedman, 1985).

The negative consequences of repeated dieting are both mental and physical. Physical effects often include malnourishment and loss of cardiac muscle. Women often become intensely frustrated with themselves for not being able to achieve or maintain their goals. "Through weight loss, they expect to feel more confident, to like themselves better, to be more outgoing and to be happier. When the body doesn't measure up, most women feel that they don't either" (Brown & Jasper, 1993, p. 54).

In their determination to conform to society's idea of thinness, women may develop eating disorders such as anorexia nervosa or bulimia nervosa. Both were relatively unheard of in the earlier part of this century, but the incidence of these disorders skyrocketed to "practically epidemic" proportions in the 1970s, when widespread communication portrayed a very thin standard of beauty (Brown & Jasper, 1993). An estimated 5% to 10% of adolescent girls and young women suffer from anorexia (Seid, 1989, p. 21). This disorder is marked by an excessive compulsion to "master the body" by losing weight to the point of starvation. The incidence of bulimia is nearly six times as great as that of anorexia (Seid, 1989, p. 21). Bulimics engage in uncontrolled eating binges and then eliminate these huge quantities of consumed food through the use of laxatives or by vomiting (Seid, 1989).

Despite the blatant portrayal of ultrathin women by the media, skepticism exists as to whether the media causes a women's distorted body images. A study of popular male and female magazines supported the position that women are presented with more diet-related messages than men. The 10 most popular women's magazines contained 76 advertisements or articles related to diet or exercise, while those for men contained only 22 (Anderson & DiDomenico, 1992). Clearly, women are the chosen target of the diet industry.

Recommendations

Although our society promotes and rewards being thin, it fails to provide suitable resources in aiding women to achieve thinness. Most diet programs lead to feelings of self-denial, deprivation and a preoccupation with food and eating (Grodner, 1992). The media glorify the bodies of severely underweight women, and consequently create the accepted epitome of female beauty and worth.

If Western culture is to develop adequate programs to help women reach a realistic body image, changes must be made in existent consumption patterns of diet programs. Short-term, "quick fixes" must be avoided. Fad programs and those that deprive clients of "forbidden foods" encourage them to binge, as well as engage in other obsessive behaviors toward food. Instead, a nondieting approach that focuses on eating for optimal health must be adopted.

In addition to making changes in diet programs, counselors must be trained to understand the amount of stress that many women suffer in response to society's depiction of women. Too often, depression or poor self-esteem are cited as the source of women's distorted body images. In reality, however, the underlying cause of many women's preoccupation with food and their bodies is pressure to conform to the American standard of beauty. This unrelenting pressure acts as a catalyst for depression and eating disorders.

Measures must be taken to inform and educate the public on the prevalence and severity of eating disorders. Health educators can be instrumental in such public awareness campaigns, which might include discussions of eating disorders and body image. Perhaps as people become aware of their own susceptibility to developing eating disorders, methods for extinguishing the disorders will shift toward prevention.

Health educators can also become links between individuals seeking help for eating-related problems and the resources available to assist them. A government-supported program providing such services has been started in Canada. The National Eating Disorder

Information Center provides information to the public, serves as a referral service, and sponsors Eating Disorder Week (Grodner, 1993). The implementation of a similar program in the United States is essential to providing readily accessible services and information to communities across the country.

Legislative actions must be taken to publicly denounce the media's promotion of ultra thinness. The image of the "healthy" woman that is prevalent today must be revised to more accurately illustrate the variety of shapes and sizes healthy bodies may have. Health educators can be in the forefront of these efforts, organizing interest groups aimed at raising community awareness of the media's role in portraying unrealistic standards of beauty. Group members could be taught how to write to newspapers and magazines to express their disapproval of the media's depiction of women.

Americans must learn to accept women of all sizes as human beings worthy of love and value. This could be accomplished by informing children at elementary level to identify and accept individual differences. While some women may continue to abuse and deprive their bodies to attain a predetermined ideal, others will learn to take pride in their bodies and accept them no matter what their size or shape. Instead of experiencing guilt and feelings of failure when eating, women must empower themselves with the ability to ". . . eat without guilt, enjoy their bodies and to live in peace with themselves" (Grodner, 1992, p. 11).

Conclusions

Physical appearance has long been a criteria for determining female value in America. The media have standardized a degree of thinness that is both unattainable and unhealthy for most women. Women internalize this standard in response to the media's ever-present influence and the American culture's expectations. All too often, women become victims of the diet industry, caught in a vicious cycle of "quick-fix" weight loss that leads to long-term physical and

mental health problems. To eliminate this victimization of women, Western culture must promote acceptance of all human shapes and sizes.

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Adolescent Sexuality Education: The Public Health Role

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Adolescent sexuality represents a major issue facing public health in the U.S. High rates of unwanted pregnancy, sexually transmitted diseases (STDs), and Human Immunodeficiency Virus (HIV) infection among this population raise great concern. Increasing numbers of adolescents are engaging in sexual intercourse at younger ages (Blum, 1991); the average teenager first experiences sexual intercourse by age 16 (Olsen, 1992). Studies variously report that 50% to 70% of female students have had sex or are sexually active (Blum, 1991; "Sexual Behavior," 1992; Theriot & Bruce, 1988); for males, reported percentages range from 50% to 80% ("Sexual Behavior," 1992; Theriot & Bruce, 1988). A majority of these teenagers have had sex during the past few months ("Sexual Behavior," 1992), and most have had two or more sexual partners (Harrington-Lueker, 1991). Unfortunately, very few report regular use of condoms (Harrington-Lueker, 1991). One study found only 24% of teenage girls used birth control, and only 21% of those protected against STDs with condoms (Olsen, 1992).

U.S. teenagers have the highest rate of childbearing in the developed world (Haffner, 1993). One million teenagers become pregnant each year, resulting in 600,000 newborns and 400,000 abortions (Cullari & Mikus, 1990). Teenagers account for 26% of all induced abortions in the United States (Blum, 1991). Teen mothers who choose to keep their children tend to drop out of school, resulting in severe long-term consequences such as educational and economic hardships. Society ultimately pays high costs in the form of financial support, health care, and special education for these young mothers and their offspring (White & DeBlassie, 1992). A large percentage of the total outlay for public assistance consists of aid to teen mothers

and their children, and to families in which the mother previously had given birth while a teenager (Vincent, 1991). Teenage pregnancies cost society about $17 billion per year, in addition to the immeasurable psychological effects (Cullari & Mikus, 1990).

About 2.5 million teenagers contract STDs each year (Glazer, 1988; Olsen, 1992). According to studies, anywhere from 4% ("Sexual Behavior," 1992) to 25% (Blum, 1991; Harrington-Lueker, 1991) of adolescents are likely to get an STD. One-fifth of people with AIDS are in their twenties, which suggests that they contracted it in their teenage years (Harrington-Lueker, 1991). Eighty-six percent of STDs occur in the 15-29 age group ("Sexual Behavior," 1992).

Our society recognizes that something needs to be done about the adverse consequences of adolescent sexuality. How to specifically address this issue, however, is a hotly debated topic. While the roles of parents and schools are often the focus of debate, this paper addresses the role of public health departments in helping to organize and implement comprehensive sexuality education for adolescents. Previous programs in which health departments have conducted community outreach on their own or in conjunction with schools are cited and some barriers that health departments may face also are addressed.

The Role of Public Health

Over the past two decades, a series of public and private foundation initiatives have attempted to create and coordinate "comprehensive" or integrated health services for adolescents in hope of improving service delivery to this underserved population (Bustos, 1988; Schlitt, 1991). School-based clinics and other service models have tried to address health from a broad perspective by including physical, mental, and preventive health, social services, and health education. In a few states, comprehensive adolescent health services have become part of public health systems for the delivery of primary care.

The public health system has a responsibility to promote healthy behaviors, prevent disease, and guarantee the availability of essential

services to vulnerable populations. Despite national calls for comprehensive and preventive adolescent health services, the degree to which these services currently are available in public or private settings is not well known (Ducey, Klein, Loda & Vitaglione, 1993). Literature is available, however, on how public health departments/clinics can get involved with their community and/or schools to positively impact teen sexual behavior.

Studies show that sexuality education programs linked with reproductive health and family planning services can have a positive impact on young peoples' use of contraceptives. A review by Dryfoos (1990) cited several studies that found improved changes in contraceptive use among participants in these types of programs. Zabin and associates (1986) reported an effective pregnancy prevention program that combined a reproductive health clinic and two schools. An important feature of the program was accessibility of the clinic staff in the schools.

The link between medical clinic staff, whether school nurse or public health provider, and the classroom brings valuable resources to young people who might not otherwise have access to health professionals. Health care workers may provide instruction on family life issues, counsel students on individual health needs, and provide accessible, confidential health care services. Positive results seen with this linkage include increased use of primary preventive health clinics and family planning services (if available), improved contraceptive use among sexually active teens, a delay in initiating first intercourse among adolescent females, and decreases in pregnancy and childbearing rates among participants (Schlitt, 1991).

Kirby (1992) reviewed four different school/community programs that produced positive results, including decreased pregnancy rates, delayed onset of first intercourse, and increased birth control use. These programs focused intensely on preventing pregnancy, HIV or STDs, included educational components in schools, and reinforced education with linkages to reproductive health services in the nearby

community. Two of the programs also included strong media components.

Several studies have assessed adolescents' reasons for going to public health clinics to seek care for issues related to sexuality. Young or first-time adolescent attendees often cite confidentiality as a reason (Bar-Cohen, 1990; Herz, Olson & Reis, 1988; Clark, 1992), while 40%-60% of teens' parents are aware of their attendance (Herz et al., 1988). Cost, convenience of location, and interpersonal factors such as perceiving the staff as caring, and special tailoring to teens, also are important factors cited by teens using service providers and contraceptives (Bar-Cohen, 1990; Herz et al., 1988; Clark, 1992).

Among the adolescents who do attend clinics, there is usually a delay of one to two years between initiation of sexual intercourse and the first clinic visit to obtain birth control (Bar-Cohen, 1990). The most frequently cited reasons for this delay are fear that the visit will be disclosed to parents, fear of the pelvic examination itself, and concern about the effects of contraceptive methods (Winter & Breckenmaker, 1991).

These fears, worries, and emotional conflicts are major barriers to adolescents' use of clinic services and medical contraceptive methods, but often are not addressed by family planning clinics, which typically employ a medical model of service delivery. Winter and Breckenmaker (1991) found that tailoring clinic services to the special psychosocial needs of adolescents has beneficial effects. Their study revealed that the most powerful and consistent effect was on contraceptive use.

Herz et al. (1988) demonstrated that public health facilities can successfully implement services designed to meet needs of inner-city, high-risk adolescents, and can thereby increase registration for family planning services. A public health facility that implemented a Teen Clinic was successful in attracting new adolescent family planning patients, lending support to specialized teen services. This facility experienced an 82% increase in registration of female teens, while two comparison facilities that did not have a Teen Clinic had a consistent or decreasing number of female teens. Special hours, promotions

targeting teens only, and "rap" groups were cited as important factors for first and return visits (Herz et al., 1988).

In another study, counties that met a high proportion of teens' needs for contraceptive services were found to have clinics that were more numerous, flexible, diverse, innovative, assertive, visible, and more likely to have special outreach programs for teenagers. These findings suggest that some program activities tailored to teenagers do have an impact on the degree to which at-risk teenagers are reached and served by family planning agencies (Winter & Breckenmaker, 1991). Clearly, public health departments, whether on their own or supported by schools and communities, can play an important role in improving the sexual health of adolescents.

Barriers to the Public Health Role

The barriers to public health involvement in adolescent sexuality education lie in two places: funding and lack of effective state mandates. The explosion of STDs and HIV, along with the soaring cost of pap smears, oral contraceptives, and other medications, are straining already meager family planning clinic budgets (Donovan, 1991). Clinics also see "sicker" patients who have no other health care. Although family clinics are operated by various agencies such as health departments, Planned Parenthood, and nonprofit organizations, virtually all are facing monetary crises (Donovan, 1991).

The federal government dismantled the system of collecting data on the number of federally subsidized family planning clinics and patients, so there is no way to know whether the number of subsidized clinics has declined because of inadequate funding and lack of public support. Longer waits for new clients and declining numbers of patients in some clinics may be due to cutbacks on outreach activities and services. Clinics are serving fewer women who are in need of subsidized services and are taking a more "bare-bones" approach to service (Donovan, 1991). The Centers for Disease Control and Prevention (CDC) are beginning to realize the benefits of family planning

services in prevention activities. Even if Title X funding is increased and Medicaid eligibility expanded, however, clinics will still probably need additional support from the federal government and states to cope with costs (Donovan, 1991).

As of 1985, there was no systematic information regarding variations in service protocols and outreach strategies of public health facilities (Herz et al., 1988). Despite increased attention and mandates by states, many communities have been reluctant to establish a comprehensive sexuality program. Directives do not always result in effective programming at the classroom or community level (Schlitt, 1991). The importance of funding, community/school support, and directives are evident in examples of North Carolina and Florida public-health-based sexuality education involvement.

A study of North Carolina's local health departments showed that four of five departments provided school-based services to adolescents and one of three provided specialized adolescent programs or services (Ducey et al., 1993). Only seven of 100 local health departments provided comprehensive health services to adolescents. Teen sexual activity was addressed in 33 of 100 local health departments and teen pregnancy in 22 of 100. Counties higher in per capita income and percent adolescents were more likely to provide comprehensive clinics and adolescent programs. Health departments with school services served twice as many adolescents as those without. It was concluded that few local health departments in North Carolina provided comprehensive health services to youth.

In Florida, although sexuality education is mandatory in grades K-12, it is up to the individual district to implement such programs. The Florida Department of Education recommends forming community advisory boards, using health educators to implement the programs, and as of 1990, school-based clinics. However, they do not track the programs. The school-based clinics are funded through the Florida Department of Health and Rehabilitative Services (HRS). While HRS tracks the clinics, it does not track the services each provides, and the schools that provide family planning services or refer

students to health departments do not advertise these services. A permission slip may be sent home with students so that parents can indicate the confidential services their child may use (L. Groess, personal communication, April 20, 1994).

Implications for the Public Health Role

There is growing consensus that a collaborative effort among community agencies is needed to provide effective preventive and comprehensive health-care services for adolescents (Dryfoos, 1990). Ducey et al. (1993) assert that

> Given the financial, staffing, facility and political constraints faced by many public health departments, community-wide participation and support are likely to be an essential element in assuring effective and durable comprehensive health care programs for adolescents in the public sector. Through alliances and coalitions with schools, community centers, social service agencies, health agencies and others, local health departments can help to effectively and efficiently address the needs of adolescents in their communities. (p. 312)

More mandates for sexuality/HIV education are emerging, but the specifics are usually left to individual districts/health departments and are not enforced or monitored. These decentralized systems result in considerable variability between counties (Ducey et al., 1993).

States can support comprehensive sexuality education by providing clear policies, including a framework of goals and objectives; providing local communities with technical assistance; monitoring local districts to ensure implementation; and by providing funding, human resources, teacher training, and materials development (Schlitt, 1991). Programs with similar goals (decreasing STD/pregnancy rates) need to be integrated so their efforts use resources more effectively and have greater impact (Kirby, 1992).

Ideally, schools should implement a comprehensive sexuality education curricula that supports abstinence, builds useful and practical decision-making skills, includes values clarification and self-esteem

components, covers a range of information within human sexuality, teaches STD and pregnancy prevention through contraceptive use, and encourages healthy sexual expression. This program should be supported through comprehensive community involvement and a community advisory board. Public health units should work with the schools to provide school-based clinics (or a medical services counterpart), offer parent education courses to promote active interaction, involve media campaigns, and act as a referral system to other community resources.

Many communities will have to start slowly in implementing changes and building resources. Opportunities still exist to promote community involvement and networking. Health departments can work with the schools to provide information for communities and serve as a referral network for professionals, parents, and youth. Schools can make an invaluable contribution as a clearinghouse in which materials on prevention services, for both adolescents and parents, offered through the health department, community agencies, or school, are centralized. A directory of services could be updated and distributed on a regular basis (Paget, 1988). A hotline for students to call and get information on STDs, contraceptives, and/or sexuality issues could be implemented. The school and public health department could organize group sessions and after school programs that address sexuality issues for the students. Peer educators might be trained and provide a valuable resource to students. Assessing current services and available resources, and what aspects of reproductive services are most needed by adolescents in the community would be necessary in deciding where to start. Regardless, combining the efforts of health departments and schools would allow the community to accomplish more for the reproductive health of adolescents in their community.

Conclusion

Sexuality education mandates have increased and curricula have been implemented in schools, but the statistics regarding adolescent health have not changed dramatically. This may be due to the variations in implementation and the lack of a comprehensive community approach. The whole community — schools, students, medical service, public health, parents, campaigns, state legislature — needs to be involved in working for a common goal. That shared goal, increasing abstinence and/or correct and consistent contraceptive use, addresses the various problems related to adolescent sexuality, including STDs, HIV, unwanted pregnancy, and abortion. Adolescents need support, education, and accessible resources to achieve this goal. Until comprehensive programs combining the efforts of health departments and schools are implemented to provide broader, more effective programs, we must be realistic about our goals of combating the adverse health consequences of adolescent sexuality.

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The Role of Health Educators in the Occupational Health and Safety Field: Present and Future Opportunities

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Introduction

In 1992, there were 3,200,000 disabling injuries in the American workplace. The Bureau of Labor Statistics (BLS) reported that over 457,000 occupational illness cases were filed with their agency in 1992 (National Safety Council, 1994). Healthy People 2000: National Health Promotion and Disease Prevention Objectives (1990), stated that of the 110 million people currently employed, 10,000 or more suffer daily work-related injuries that result in lost time from work (Department of Health and Human Services, 1990). The National Safety Council (1994) estimates that the total financial cost of these work injuries and illnesses to American society was 111.9 billion dollars in 1993.

Clearly, occupational injuries and illnesses place a great financial burden on American society. Of equal concern is the human suffering that workers and their families may face as a result of work-related injuries and illnesses. The physical and psychological trauma of physical rehabilitation, time off work, or job loss can significantly impact the life of injured or ill workers and their family members. Many permanently disabled workers become lost wage earners who must rely on financial assistance from state and federal agencies to provide social security or worker compensation benefits. The cost of providing this aid escalates each year (Hanrahan & Moll, 1989).

The Federal Occupational Safety and Health Act of 1970 was the first major national initiative aimed at ensuring that all workers have a safe and healthful working environment. Emphasis was placed on implementing engineering controls, enforcement of regulations and/or

compliance standards, and training personnel as a comprehensive approach to improving worker safety and health (Vojtecky, 1988). This legislative act provided the foundation for improved working conditions and initiated efforts to prevent and reduce work-related injuries, illnesses, and fatalities in all occupational settings.

Current trends in occupational injury and illness incidence rates reveal that work-related injuries and illnesses are still a prevalent public health problem (National Safety Council, 1994). Healthy People 2000 targets specific reduction goals for work-related injuries and illnesses that result in medical treatment, lost time from work, restricted work activity, or that lead to occupational disease. To realize these goals the government is emphasizing greater efforts in worker education, occupational hazard surveillance and research, and the development of prevention strategies to improve worker safety and health (USDHHS, 1990).

Enforcing the mandates of the Occupational Health and Safety Act of 1970 and achieving the goals set by Healthy People 2000 will require an increasing number of professionals in the occupational health and safety field. In 1982, 60 percent of worksites were without occupational health and safety staff or consultants (USDHHS, 1990). Recent proceedings from the Third National Injury Control Conference (1991) reported that the number of trained occupational health and safety professionals is dramatically insufficient and is one of the major problems facing injury prevention and control efforts in the U.S. workplace today.

Training of more occupational health and safety professionals is essential to present and future efforts in preventing and reducing this enormous and costly national health problem (USDHHS, 1991). Specially trained individuals are needed to educate workers, to conduct occupational surveillance and research, and to develop, implement, and evaluate prevention programs. Because health educators possess many of the basic skills in education, surveillance and research methods, and prevention program development and evaluation that are needed in the occupational health and safety field, they presently have a great

opportunity to enter the field to address these challenging problems and issues.

Worker Education

Hundreds of federal safety and health standards have been legislatively mandated in the past 25 years to protect the American worker. Many of the standards passed in the last decade require employers to provide specific information and training programs to educate workers to prevent work-related injuries and illnesses (Vojtecky, 1988). The Federal Hazard Communication Standard, called "Right-to-Know," which was passed in 1983, is the primary education and training standard established for all workplaces. It calls for the development and implementation of information training and written programs to protect workers in each workaday from various hazardous materials. Employers are required to conduct annual "Right-to-Know" training for all employees (Federal Hazard Communication Standard, 1983).

The overall record of workplaces complying with this mandatory training standard is unknown. However, the Occupational Safety and Health Administration's (OSHA) annual listing of violations of the most frequently cited OSHA standards reveals a major problem in this area. Throughout industry and construction worksites, three of the top five most-cited standard violations in fiscal year 1993 included insufficient information training and written programs for the "Right-to-Know" standard (Bureau of National Affairs [BNA], 1994). These data suggest that many employers and work settings do not adhere to the mandatory "Right-to-Know" regulation requiring employee education.

Robins and Klitzman (1988) report that the introduction of the "Right-to-Know" and hazard communication laws at the federal, state, and local levels has opened the door for increased opportunities to conduct health education in the workplace. The Occupational Safety and Health Act of 1970 also provides additional support for health

education in the workplace by recognizing that the implementation of engineering and/or environmental controls, along with improvement in worker behaviors, has a direct impact on preventing work-related injuries and illnesses (Vojtecky, 1988).

Luopajarvi (1987) suggests that when health education is combined with engineering or environmental improvements in the workplace, work-related injuries or illnesses are greatly reduced. A Finnish study conducted by Kukkonen, Luopajarvi, and Riihimaki (1983) used health education and ergonomic improvements in the workplace to prevent neck and shoulder strain in a group of bank employees. Program participants were presented with health education information on basic ergonomic principles, importance of work habits, etiology and prevention of muscle strain, and relaxation methods that could be used during work breaks to relieve muscle tension, along with moderate ergonomic improvements at each work station. Results revealed that employees in this prevention program experienced major reductions in the prevalence of neck and shoulder tension syndrome compared with employees who did not participate in the program. Findings from this study indicate the important role health education can have in complementing engineering or environmental controls to reduce many of the occupational health and safety problems our present workforce is encountering.

Because worker education is an essential strategy in the prevention of occupational injuries and illnesses, health educators are recognizing the workplace as a vital setting for future health education and health promotion programs. According to Chen and Jones (1982), over 100 million people in the U.S. spend one-third of their waking hours in the workplace, making it an ideal location for health education aimed at improving lifestyles, increasing morale and productivity, reducing health care costs, and promoting a healthier workforce.

Surveillance

To reach the national objectives set in Healthy People 2000 and to meet the primary goals of the Occupational Safety and Health Act of 1970, specific information about work-related injuries and illnesses must be collected and analyzed to identify major health and safety problems occurring in worksites today. Because the organized surveillance systems needed to acquire this information are absent in today's workplaces, however, little data are available concerning work-related injuries and illnesses (USDHHS, 1991). The Committee on Trauma Research (1985) reports that the use of occupational injury and illness surveillance systems is seriously limited on national, state, and local levels. The lack of these comprehensive surveillance systems directly affects the ability of trained health and safety professionals to target specific prevention strategies to reduce the occurrence of occupational health problems.

The federal government is initiating efforts to develop and implement a national comprehensive surveillance system for work-related injuries and illnesses. Currently, though, many industrial plants, public facilities, and companies are currently without injury and illness reporting systems. Health and safety professionals trained in developing and implementing occupational injury and illness surveillance systems are needed throughout the country (USDHHS, 1991).

Federal, state, and local health agencies are traditionally viewed as having the responsibility and authority to protect the public health within all communities. Key (1985) suggests that health departments are forgotten resources in combating occupational health and safety problems. Trained personnel, program services, and other resources are available in many local health departments, yet these resources have not been used adequately. In particular, state and local health departments are not sufficiently conducting surveillance of or monitoring work-related hazards. Without greater involvement of health departments, many preventable occupational health problems will continue.

El-Ahraf, Null, Wheaton, and Boling (1982) report that more occupational health training is needed among local health department

personnel, who could effectively contribute to reducing local occupational health problems. For example, health department personnel trained in surveillance methods such as epidemiology could identify local workplaces, work hazards, or occupations where excessive numbers of work-related injuries and illnesses are occurring. With this data, prevention strategies could be targeted toward reducing these problems.

Research

The Third National Injury Control Conference held in 1991 reported that serious deficiencies exist in the number of studies being conducted to specifically identify risk factors associated with occupational injuries and illnesses. Without research, important information on risk factors and other circumstances that are directly associated with work-related injuries and illnesses will not be available (USDHHS, 1991).

Haddon (1980) suggests that accidents and injuries are not just random events, but are predictable entities with known risk factors, as is the case with diseases. As a result, research is being emphasized today to identify specific work environments, characteristics of workers, or other factors that may contribute to the occurrence of work-related injuries or illnesses (Krause, 1985). The Committee on Trauma Research (1985) documented the drastically insufficient federal support for research to reduce occupational injuries and illnesses. To improve this situation, more public and government recognition of the seriousness of this major public health problem is needed (USDHHS, 1991).

Throughout the past three decades, the composition of the American workforce has been changing dramatically. In 1986, the National Institute of Occupational Safety and Health (NIOSH) reported that a major shift in employment from manufacturing industries to service industries has been occurring throughout the nation. Healthy People 2000 reports that greater research efforts must be initiated to solve the new occupational health and safety concerns related to this

shift, including increasing use of video display terminals, greater worker contact with hazardous chemicals and materials, increased numbers of women, older workers and non-English-speaking minorities entering the workforce, and the rise of violence in the workplace (USDHHS, 1990).

Hollander and Feldman (1986) suggest that employers have become receptive to workplace health and safety research as a means of addressing the extremely high costs of health care and insurance. Recently, many businesses have implemented cost-effective health education programs in an attempt to lower skyrocketing health care costs for injured or ill workers. The primary goals of these programs are to improve the health and safety of employees and to reduce the financial burdens associated with these problems. However, to effectively meet these objectives, more research must be conducted to identify particular factors associated with health and safety issues so that suitable prevention measures can be developed (Hollander and Feldman, 1986).

To combat occupational health and safety problems, health educators and other safety professionals must examine high-risk industries and occupations (e.g. agriculture, construction, laborers, and the self-employed), as well as gender-, age-, and race-specific factors that may contribute to the occurrence of these injuries and illnesses. Research examining these factors is the crucial first step toward the development and implementation of prevention strategies (USDHHS, 1991).

Prevention Programs

The major disabling work injury and occupational illness impacting the American workforce today are back injury and cumulative trauma disorder, respectively. In 1993 over 770,000 back injury cases were reported by state labor departments and, in 1992, 280,000 cumulative trauma disorder cases were reported by the Bureau of Labor Statistics (National Safety Council, 1994). Cumulative trauma disorders are the result of repeated stresses to a body part due to repetitive movements, awkward positions, vibrations, force, or noise that occurs over a long period of time. Many of these occupational health prob-

lems can be avoided through the development and implementation of prevention strategies (USDHHS, 1991). Smith (1987) suggests that prevention efforts for work-related injuries and illnesses can be compared to traditional strategies used to prevent the spread of infectious disease and that many of these injuries and illnesses can be prevented by educating workers and by improving the conditions of their work environment.

In 1986, the National Institute for Occupational Safety and Health reported that more effective educational programs must be developed to prevent or reduce low back injuries in the workplace. Luopajarvi (1987) suggested that including health education in prevention programs is vital for reducing low back injuries or other work-related musculoskeletal problems. Paalasmaa's (1986) study introduced health education methods in a work training program among Finnish loggers to prevent and reduce the occurrence of low back injury. The prevention program provided workers with information on correct body positions while lifting, using proper techniques to lift various-sized objects, and relaxation and fitness exercises to be used during breaks to reduce the occurrence of back injuries.

For evaluation purposes, workers were observed and videotaped while lifting on the job. Positive feedback was given to help workers improve their body positions and lifting techniques. Results from this study indicate that workers in the program dramatically reduced their potential for sustaining a detrimental back injury by improving their body positions and lifting techniques. These improvements were directly attributed to the health education efforts used in the program. Findings such as this provide valuable support for the development of prevention programs using health education methods to overcome many of the prevalent injuries and illnesses occurring in workforces throughout the world today (Luopajarvi, 1987).

Another important issue facing the occupational health and safety field is the inadequate number of identified, effective prevention strategies. Program evaluations are critical to ensuring that work-related injury and illness prevention programs are having their in-

tended effects (USDHHS, 1991). There is a direct need for evaluation of high-quality prevention programs in the American workplace today.

Robins and Klitzman's (1988) study on the design, implementation, and evaluation of a workplace health and safety education program to bring a large manufacturing firm into compliance with the Federal Hazard Communication Standard identified the importance of evaluating these programs. The evaluation identified many strengths and weaknesses of the program. In particular, concerns about the training of personnel who presented the program, delivery methods in providing information to workers, availability of important hazard information, and time pressures were all identified as important aspects that either enhanced the program or needed to be improved to make it more effective in the future.

Implications for Health Education

Work-related injuries and illnesses decrease quality of life, produce stress among workers and their families, and place a great financial burden on our society. Healthy People 2000 Review (USDHHS, 1993) issued an assessment of the nation's progress toward the goals set for the year 2000. Data collected in the area of occupational safety and health indicate that between 1988 and 1992, the incidence rates for work-related injuries remained consistently above the target goals. In fact, the incidence rate for the leading occupational illness, cumulative trauma disorder, has increased so dramatically over the last five years that objectives set for the year 2000 seem out of reach. Clearly, much work is still needed to prevent and reduce work-related injuries and illnesses (USDHHS, 1993).

This problem presents a number of opportunities for health educators, who possess many skills needed to reduce the excessive numbers of work-related injuries and illnesses. Health educators are trained in a variety of educational methods and techniques that can be adapted to workplace health and safety information and training pro-

grams, including use of audio-visual equipment, lecturing, small group discussion, and role playing.

The need for more surveillance of occupational hazards on national, state, and local levels can be met by health and safety professionals using epidemiological techniques, which involve the ongoing and systematic collection, analysis, and interpretation of data related to health (Baker, Honchar, and Fine, 1989). Epidemiology has been widely used by public health officials in the past as an assessment tool to identify factors associated with the spread of infectious diseases. These same epidemiologic principles can be implemented by trained health educators to identify factors associated with occupational injuries and illnesses and to monitor trends in their occurrence.

Research on occupational health and safety problems is essential to reduce their occurrence in the American workplace. Health educators trained in the skills of research design, development, and implementation have a great opportunity to positively impact this area of need. Health educators can conduct studies of high-risk occupations or industries, occupational injuries or illnesses that result in fatalities or severe disability, and preventable injuries that occur frequently in the workplace. Through such efforts, specific workers, work environments, and job duties can be identified and targeted for prevention programs.

Prevention program development and evaluation are deemed critical to the success of efforts to reduce occupational injuries and illnesses. Health educators are trained to conduct needs assessments, which identify problem areas to be targeted; to develop program objectives and goals to be accomplished by the program; to develop evaluation methods such as observation, surveys, or interviewing that can determine if program goals or objectives are being met; and to coordinate available resources so that effective health and safety prevention programs are implemented in the workplace.

Health educators can play a vital role in contributing to the efforts to reach the national goals and objectives set by Healthy People 2000 and the Occupational Safety and Health Act of 1970. Their skills are needed to combat the preventable occupational injuries and ill-

nesses plaguing the workplace today. By joining with other trained health professionals entering the occupational health and safety field, health educators can contribute to the improvement of the American workplace.

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Issues Related to the Use of Racially Segregated Health Data

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Introduction

The segregation of data by race has been a time-honored standard within the annals of medical and health research. Most researchers and health care providers assume that the reasons for segregating data by race are based on sound biological principle. Only a small number of individuals have thought to question the validity of using racially segregated data, perhaps because as with other standard practices in medicine and health, there is a reluctance to question a methodology that has been in place for decades.

Nevertheless, the time has come to closely examine the segregation of health data for its effectiveness as a research and diagnostic tool. Studies have concluded that racial stereotypes can affect health care providers' perceptions of patients and the quality of care given. Does this method of categorization render more potential harm than good by instantly labeling each patient with "race," which, for many, may be stigmatizing? Why do we segregate our health data this way? What are the origins of this use of health-related data? This paper attempts to answer these questions.

Methods of Collecting Race Data

In exploring the issue of race-segregated health data, it is imperative that the collection methods used by data sources be considered. The U.S. Census Bureau and the National Center for Health Statistics provide much baseline statistical data for many public health studies. An abundance of controversy exists over the lack of consistency in the

methods these agencies have used to collect racial data over the years. For example, "persons who were Black, American Indian, Chinese or Japanese were not included as separate groups until the various censuses of 1850 to 1870" (Lacey & Nandy, 1990, p. 25). Persons of mixed parentage, starting in 1980, were asked to use the race of their mother to identify themselves. This differed entirely from the method used in 1970, which asked for the race of the person's father. Individuals who did not classify themselves as fitting one of the given race categories but who wrote in *other, Cuban, Puerto Rican, Mexican* or *Dominican* were counted as "white." The Asian and Pacific Islander category was expanded in 1980 to include persons who were Chinese, Filipino, Japanese, Asian Indian or others from similar geographic areas. In the previous censuses, Asian Indians were classified as white (Lacey & Nandy, 1990).

A related issue, the census undercount of black males, dates back to the 1870 census and is still a considerable problem. Currently, the undercount of African-American men between the ages of 35 to 54 is estimated to be between 16 and 19 percent (Williams, Lavizzo-Mourey, & Warren, 1994). Any statistical rate that includes African-American males in its denominator will reflect this undercount by showing a greater incidence or prevalence among African-American males than actually exists.

The National Notifiable Diseases Surveillance System (NNDSS) of the Centers for Disease Control and Prevention is another data source for public health statistics in the United States. Like the U.S. Census Bureau, the methods the NNDSS uses for the collection of race-classified health data are inconsistent and its data have been labeled "incomplete" with wide variances existing from state to state.

Morbidity rates provided by the NNDSS are based on data from only a few states, and those states often use different methods and coding in their reports, which may affect comparisons of race data overall. The methods of reporting race used by the NNDSS may also differ from the methods used by the Census Bureau, creating inconsistencies when comparing data from these agencies (Buehler, Stroup,

Klaucke, & Berkelman, 1989). With this in mind, it is understandable that one of the national health objectives for the year 2000 is to "develop and implement a national process to identify . . . important data needs for disease prevention and health promotion, *including data for racial/ethnic minorities* . . . [italics added], and to establish mechanisms to meet these needs" (Office of Disease Prevention and Health Promotion, 1990, p. 557).

Origins of Segregated Health Data

Why are health data segregated according to race in the first place? The roots of this tradition are lodged in the belief that vast genetic differences occur between different races. The theory for racial differences in health is based on a genetic model that was conceived in the late 18th century, which asserted that race was a "valid biological category, that the genes that determine race are linked to those that determine health, and that the health of a population is largely determined by the biological constitution of the population" (Williams, Lavizzo-Mourey & Warren, 1994, p. 3).

Modern research, however, has indicated that although the concept of race may be socially meaningful, it has limited biological significance. There is, in fact, more genetic diversity within races than between them (Williams, Lavizzo-Mourey & Warren, 1994).

Compared to the rest of the world, this country is unique in the way that race is defined and described and assigned different characteristics. In many ways, methods of dividing health statistics into racial categories seem to be simply a reflection of this country's heritage of racial segregation. For some time, scholars have feared that in the process of segregating health statistics on the basis of race, false beliefs about the behavior of nonwhites within both the health community and society in general were being fueled (Terris, 1973).

One example that seems to support these fears is what appears to be application of a special rule to African-Americans in the United States. As Davis (1991) points out, "no other ethnic population in the

nation, including those with visibly non-caucasoid features, is defined and counted according to a one-drop rule" (p. 12). The "American institution known informally as 'the one-drop-rule' . . . defines as black a person with as little as a single drop of black blood" (Wright, 1994, p. 48). The one-drop-rule originated with the belief that each race had a separate blood type, which was associated with a set of physical traits and social behaviors. Another possible explanation for the existence of the one-drop-rule is that it was implemented primarily to create as many slaves as possible (Wright, 1994). A less formal explanation is that the stigma of blackness was so powerful that any amount of blackness was sufficient to endow an individual with the stigma.

Alternatives to Using Race as a Determinant

Occupation and Social Class

If segregation of medical data on the basis of race is discontinued, what determinant of risk do we propose to use instead? Two determinants that have proven far more important epidemiologically than race are occupation and religion. In years past, Britain conducted a decennial analysis of mortality by occupation and social class, which provided valuable information for identifying high-risk populations (Terris, 1973). By contrast, the U.S. has only undertaken a comparable set of studies once, in 1950. These studies provided valuable information for the identification of populations at high risk for certain diseases. Unfortunately, many epidemiologists are not familiar with the studies (Terris, 1973).

Religion has proved to be a valuable marker for epidemiological purposes, because certain religions are associated with specific practices with regard to alcohol, tobacco, and so forth. Considerable light has been shed on the epidemiology of cancer of the lung, esophagus, and other sites, as the result of studies comparing the incidence of these diseases in different religious groups. Terris (1973) notes that ". . . no one would dare to demand that all mortality statistics be classified by

religion in the interest of epidemiology and disease control. . . . But if not by religion, why then by color?" (p. 479).

Socioeconomic status (SES) has also been explored as a possible alternative to the classification of race. Problems exist, though, in defining SES. Should geographic locale, which accounts for economic variation, income level, assets, occupation, or level of education be used to define SES? Further complicating the use of SES is the effect that racism has in determining a person's socioeconomic situation. Quality of education, amount of wages received, and purchasing power are only a few of the related factors that are affected by race. More directly, racism can determine the quantity and quality of medical care an individual receives. By and large, researchers have little awareness of all "the mechanisms and processes by which racial discrimination may affect health" (Williams, Lavizzo-Mourey & Warren, 1994, p. 7).

Multiracial Category

Given the complexities of classifying race for health data, and the related discrepancies which have rendered the resulting data all but useless, it is obvious that if racial classification is to continue to be used, improvements in consistency must be made. One solution that has been suggested for this statistical dilemma is the use of a "multiracial" category in the 2000 census. This multiracial category would not be directed at all persons of mixed ancestry, but specifically at persons who have parents who are recognized as being from different races (Wright, 1994).

Although it appears that the adoption of a multiracial category would solve some problems in classifying persons whose parents are from different races and who identify with more than one race, some argue that more problems could be created than will be solved. For example, the increase in the proposed multiracial category would produce a decrease in the race categories from which these persons would be withdrawn. This resulting decrease would affect funding of

certain programs that benefit minorities. This is why some experts are concerned that the establishment of a multiracial category could undermine the advancement of "nonwhites" in our society (Wright, 1994). Furthermore, this idea seems to be, in its simplest form, only a modernization of the term mulatto.

Racial Stereotypes and Health Care Quality

One concern about the use of race-categorized health data is the role it may play in the perpetuation of racial stereotypes on the part of health care providers and the resulting lapses in health care quality. In a study of medical students and their stereotypes of patients, researchers concluded

> That factors such as social class, economic background, [and] ethnicity . . . do indeed affect clinical decision-making. The physician's reactions to these nonbiomedical variables often are not based on objective data but rather result from a life-long conditioning in which stereotypes have been unconsciously integrated into the physician's beliefs. (Johnson, Kurtz, Tomlinson & Howe, 1989, p. 728)

Studies have been conducted to determine whether there are significant differences between medical treatment of white and minority patients. One of these, a study on revascularization procedures performed after coronary angiopathy, determined that, "The adjusted odds of receiving a revascularization procedure after coronary angiography were 78% higher for whites than blacks" (Ayanian, Udvarhelyi, Gatsonis, Pashos, & Epstein, 1993, p. 2642) and that "Physicians were less likely to recommend coronary artery bypass graft surgery to blacks than whites . . . suggesting physicians were more aggressive in their therapeutic approach for white patients" (Ayanian et al., 1993, p. 2645). The same study concluded that the racial differences in administering this procedure were not a reflection of any impaired access to cardiologists or hospitals that perform the procedure, but instead were potentially a result of racial bias (Anyanian et al., 1993).

Racial disparities in medical care have also been noted in patients receiving drug therapy for HIV infection (Wilson, 1993) and, perhaps more dramatically, in patients on waiting lists for renal transplants. In the case of the latter, one study published in the September 15, 1993 issue of *The Journal of the American Medical Association* concluded that "despite their constituting 31% of patients on waiting lists, blacks received only 22% of cadaveric kidney transplants in 1990, with a median waiting time of 13.9 months vs 7.6 months in whites" (Gaston, Ayres Dooley, & Diethelm, 1993, p. 1352). Other studies have shown that racial disparities exist in a broad spectrum of medical treatment, including analgesia for long-bone fractures, treatment of alcoholism, and rehabilitation after a mastectomy (Moore, Stanton, Gopalan, & Chaisson, 1994).

Recommendations

This brief exploration of the use of race as a variable related to health makes it clear that this is an extremely complex issue. Although answers were found to some of the questions raised in the introduction, there are yet a multitude of other questions left unanswered: Is racially segregated health data beneficial? Could this method of categorization harm patients by perpetuating racial bias among health professionals? If the use of racially segregated health data is discontinued, what variable should be used instead?

Certain suggestions can be made for the future. First, health educators need to explore possible alternatives to using race as a determinant of health risk. By focusing on race, other factors that could prove much more useful for epidemiological purposes may be overlooked. Second, if race continues to be used as a determinant, efforts need to be made to develop consistent data-collection methods. This would mean a more thorough explication of race and ethnicity and the specific health-related aspects of belonging to any racial or ethnic group. Third, advances need to be made in educating all health professionals, including health educators. Students as well as profes-

sionals in all health-related disciplines need to be more aware of their own ingrained perceptions of stereotypes and of how these views can affect their clinical assessment of patients and preventative health programs.

Because the use of race-categorized health data has been the standard for many years, there is significant resistance to exploration of an alternate means of assessing health risks. However, we should remember that many great breakthroughs in science and medicine would not have been made if the status quo had not been questioned. There are times when health educators and caregivers need to perform a "reality check" by looking beyond the accepted standards to seek other, more effective methods of serving the public's health needs. Health educators can take the lead in seeking alternatives to racially segregated health data as a standard in our research. Awareness of the inconsistencies that are inherent when using race as a health determinate is in itself an important step. Health educators can also assist in drawing attention to the need for additional research in this important area.

Williams et al. (1994) state, "the Tuskegee Syphilis Study illustrates how the uncritical acceptance of normative beliefs about race can lead to the development of research hypotheses, and the initiation of research projects, that the researchers themselves would rule out under normal circumstances" (p. 3). Although this illustration is extreme, it illustrates the point that researchers need to examine the norms and standards that are used in collecting health data more critically. Williams et al. are correct in asserting that the time has come for "a courageous group of persons who are willing to exercise leadership and chart a new agenda for research on racial or ethnic variations in health status" (p. 40).

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Cultural and Environmental Influences on Dietary Behavior and Cardiovascular Health Among Chinese-American Adolescents

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Because diet-induced elevations of total and LDL cholesterol are assumed to be the major cause of cardiovascular disease (CVD) in the United States, it may not be possible to produce dramatic reductions in CVD rates without a major change in the eating habits of Americans. Dietary behavior may be affected by factors such as socioeconomic, environmental, and cultural influences (Grundy & Bilheinow, 1989). This paper reviews the dietary risk factors of cardiovascular disease, cultural and environmental influences on dietary behavior, and cardiovascular health among Chinese-American adolescents, and implications for health education.

Incidence rate and risk factors of cardiovascular disease

Cardiovascular disease (CVD) is the leading cause of death of adults in the United States. About 570,000 people die prematurely from CVD each year. Approximately half of Americans over age 65 have cardiovascular disease, most commonly coronary heart disease (CHD), with or without hypertension (Brown, Cundift, & Thompson, 1989).

The incidence of CVD has been linked to modifiable risk factors such as low levels of plasma HDL cholesterol; elevated levels of plasma, total and LDL cholesterol; and hypertension (Brown, Cundift, & Thompson, 1989; Higgins & Thom, 1989). Along with investigations of factors such as smoking and hypertension, much research has been devoted to diet as the single most important factor in CVD (Tao, Huang, Wu, Zhou, Xiao & Hao, 1989). Dietary behavior has also received a good deal of attention.

Diets high in energy density, total fat, saturated fatty acids, and cholesterol, but low in the ratio of polyunsaturated to saturated fatty acids (P:S) are associated with increased plasma lipids, total cholesterol, triglycerides, LDL cholesterol, and an increase in susceptibility to CVD (Shaper, 1987). Recently published reports indicated that approximately 36% of all Americans age 20-74 years are candidates for medical advice and intervention for high blood cholesterol levels (Sempos, Fulwood, & Haires, 1989). National Health and Nutrition Survey Group Guidelines (NHANESII) also indicate that 27% of Americans have high blood cholesterol levels (Pinnelas, Torre, Pugh, & Strand, 1992). Americans obtain a high percentage (39%) of their energy from fat. Thirty seven percent of this energy from fat comes from saturated fat. Americans also ingest up to 500 mg of cholesterol per day (Tao et al., 1989).

The Chinese have a lower incidence of CVD than Americans, though they have higher smoking rates (61%-70% for men and 7%-10% for women) and similar average blood pressure levels (129 mm Hg for systolic and 85 mm Hg for diastolic). Age-standardized mortality rates per 100,000 for males and females aged 37-74 years old in 1984 were 124 and 89, respectively, for subjects in Beijing, China, compared with 373 and 173 for subjects in the United States (Tao et al., 1989). For CHD, a major form of CVD, 1984 crude death rates were reported as 36.9 per 100,000 and 15.6 per 100,000 for the urban and rural population in China, respectively. The average rate for the nation was estimated to be 20 per 100,000, which was approximately one-tenth of the rate for the United States (Tao et al., 1989).

When the concentration of total and LDL cholesterol in peripheral blood falls below a certain value, as is common in China, there is no development or at worst slow development of atherosclerosis, despite the presence of other risk factors such as hypertension and cigarette smoking. Most Chinese have cholesterol levels around 150 mg/dL, a value that could hardly be expected in many Americans because of their high fat intake (Bernhardt et al., 1991).

These differences in incidence and mortality rates from CVD between China and the United States may be attributed to different

dietary behaviors. Dietary surveys in China showthat the Chinese diet has the common characteristics of a high carbohydrate content, mainly from starch, and a relatively low fat content. The proportion from saturated fat is low. Only 25% of calories consumed come from total fat (Tao et al., 1989).

Despite lower incidence and mortality rates for Chinese living in China, CVD is the leading cause of death for Chinese-Americans living in this country. Incidence and mortality rates from CVD appear to increase as the Chinese migrate to the United States (Yu, Chang, & Lu, 1984). Studies show that mortality rates from CVD were 157 per 100,000 for Chinese-Americans in Los Angeles, California in 1983, a rate lower than the average American level but higher than the level for native Chinese living in China (Frerichs, Chapman, & Maes, 1984).

Supporting data from a CVD risk factor and cholesterol screening in an ethnic community in New York City suggest that the influence of environment on mean total serum cholesterol is important. Chinese living in New York City's Chinatown district have higher levels of total cholesterol than would be expected from studies of native Chinese. Chinese-Americans averaging 15 years of United States residency had the same distribution of blood cholesterol levels as Americans in the categories designated as desirable, borderline-high, and high according to the NHANESII (Pinnelas, Torre, Pugh, Strand, & Horowitz, 1992). Because this may be caused by change of dietary behavior of Chinese-Americans after they migrate to the United States, studying their dietary behavior and factors affecting dietary behavior is important in understanding the differences in CVD incidence and dietary behavior.

Impact of cultural and environmental influences on dietary behavior

The complexity of human behavior makes it necessary to utilize a theory with a broad base when dealing with behavior change. Although not specifically developed for health behaviors, research in the area of

health behavior change indicates that specific components of the Social Learning Theory are relevant to health behaviors (Strecher, DeVillis, Becker, & Rosenstock, 1986).

Bandura (1982, & 1986) formulated a number of Social Cognitive Theory (SCT) constructs important in understanding and intervening in health behavior. SCT addresses both the psychosocial dynamics of underlying health behavior and the methods of promoting behavior change. SCT assumes behavior is dynamic and depends on environmental and personal constructs that influence each other simultaneously — a continuing interaction which is referred to as reciprocal determinism.

SCT asserts that environmental factors and cultural influences are important factors affecting health behaviors, including dietary behavior. According to this theory, the environmental factors and cultural influence in which a person functions provides incentives and disincentives for performing the health behavior.

Environmental factors refer to an objective notion of all factors that can affect a person's behavior but that are physically external to that person, including social factors such as family, friends, classmates, and peers. Environmental factors also include physical factors, such as availability and accessibility of needed facilities.

Cultural influences are those stemming from the total social heritage learned and transmitted from generation to generation. Culture embraces values, beliefs, and judgments about what is good, what is desirable, and how people should behave. Culture includes the values, practices, and beliefs held by a group of members in a society that affect their behavior, health status, and influence the effectiveness and efficiency of health promotion efforts (Levine & Sorenson, 1984).

Environmental and cultural influences are different among U.S.-born Chinese-Americans, foreign-born Chinese-Americans, and native Chinese. Although it may be argued that these three groups are products of the same Chinese origin and thus have the same cultural influences, in fact cultural influences grow weaker with each succeeding generation (Yung, 1986). Most U.S.-born Chinese-Americans are first or

second generation in the United States. Their foreign-born parents or grandparents came to this country with firmly established behavior patterns, norms, beliefs, values and attitudes. Their way of thinking and behaving does not change with the change in locale. Instead, they function as bearers of their culture. These cultural influences are naturally transmitted to their offspring and are reinforced by members of the given immigrant group, social organizations, and relatives. Most children of immigrants function fairly successfully in the cultural setting created by their parents or grandparents until the children come in contact with members of the dominant group (Yung, 1986). Then, when the larger society's members exert pressure to adopt mannerisms, norms, values, and attitudes, these U.S.-born Chinese-Americans substitute some cultural uniformities found in American society (Yung, 1986).

Like cultural influences, environmental influences differ among U.S.-born Chinese-Americans, foreign-born Chinese-Americans, and native Chinese. Although Chinese parents want to transmit their culture to their children, they also are anxious that their youngsters acquire a good education. Real assimilation into the U.S. culture begins in school. Many U.S.-born Chinese American students speak English as well as American white students. Indeed, U.S.-born Chinese, with few exceptions, have been Americanized (Yung, 1986).

Foreign-born Chinese-American students may have different cultural and environmental influences than their U.S.-born counterparts (Young, 1994). Youth in Chinese society are taughtto inhibit aggressions, be secretive about their desires, and respect and obey their elders. Emotional reactions are seldom displayed by Chinese children. Because of these early family and social influences, several behavior patterns are found among the foreign-born, and to a lesser degree among U.S.-born Chinese-Americans that hinder the acculturation, assimilation, and integration of foreign-born Chinese into American society. The first and foremost pattern is the tendency of foreign-born Chinese-Americans to utilize indirect, rather than direct, methods of interaction. The second is the inclination to interact only with their families or their organizations, rather than with the larger American

society. A third pattern is the inclination to depend on others, especially family members or organization members, rather than to act on an individual basis (Schneider, 1985; Tseng & Wu, 1985).

In essence, two distinct groups of Chinese can be discerned in the United States: one with a lifestyle and orientation more towards Chinese values and norms and another exhibiting the values and norms of American society (Yung, 1986). These differences in cultural and environmental influences may mean that U.S.-born Chinese-Americans and foreign-born Chinese-Americans have totally different lifestyles and health behaviors, including dietary behavior. While the U.S.-born Chinese-Americans often have dietary behavior resembling most Americans, the dietary behavior of foreign-born Chinese-Americans may be close to traditional Chinese dietary behavior. Thus the differences in incidence of CVD among U.S.-born Chinese Americans, foreign-born Chinese Americans, and native Chinese can be explained by the difference of cultural and environmental influences.

Implications for health education

Improving the dietary behavior and cardiovascular health of U.S. born Chinese students will require nutrition education. Many nutrition curricula have been shown to increase student knowledge. A meta-analysis of nutrition education to determine effectiveness of current nutrition education practices (*Journal of Nutrition Education*, 1985) evaluated 670 studies and identified 303 as having useable research findings. Findings from the meta-analysis strongly indicated the effectiveness of nutrition education in achieving the goal of developing knowledgeable consumers who value good nutrition (*Journal of Nutrition Education*, 1985).

A continuing concern in defining successful curricula, however, is whether an increase in knowledge is adequate to effect nutritional change. Attitudes may be a more reliable mediator of nutrition behavior than cognitive knowledge. Some researchers believe knowledge is the precursor to belief and attitudinal changes, which are antecedent to

behavioral changes (Frank, Winkleby, Fortmann, Rockhill, & Farguhar, 1992).

Outcomes evaluated often include knowledge change or short-term behavioral changes rather than the enduring behavioral changes necessary to reduce the consequences of unhealthy dietary behavior. Because nutrition-related behaviors are the result of environmental and cultural influences, those influences should be considered in efforts to make nutrition education programs effective. Developing a theoretical base such as SCT with broad perspectives for programs that combine personal nutritional knowledge, skills and environmental and cultural influences is desirable (Perry, Mullis, & Maile, 1985).

To help improve the dietary behavior of Chinese-American students, health promotion programs should focus not only on knowledge and attitudes, but on environmental and cultural factors affecting diet. Because they are key factors affecting health behaviors, more attention should be paid to culture, religion, customs, socioeconomic factors, beliefs, and values. Health education programs should focus on knowledge of diet and CVD, and should teach the students how to identify healthy food.

A more comprehensive health education program should be offered to Chinese-American children, especially in Chinatown communities. With the help of government and community resources, healthy food service systems can be established, along with appropriate, accessible education programs. These programs should include techniques such as lectures, group discussions, video tapes, role plays, and activities about healthy food selection and preparation, understanding food labels, and healthy food storage. Skills such as problem solving, decision making, and peer-pressure resistance also should be taught.

Education programs should involve community leaders, family members, and students. Because most Chinese-Americans live in Chinatown communities, they have a cultural heritage of respecting community leaders. Consequently, community leaders can play important roles in developing and implementing programs. Also, though some

Chinese-Americans adopt the American lifestyle. Chinese culture continues to influence their perspectives and behaviors. Because of this, parents and family members play an important role in influencing students' behavior.

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